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volume 38

The End of Argument Structure?

María Cristina Cuervo | Yves Roberge

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VOLUME 38

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1

REMARKS ON ARGUMENT STRUCTURE

María Cristina Cuervo and Yves Roberge

1. INTRODUCTION

This volume explores a basic but central question that drives much of the current research in formal syntax. Simply put, this question asks where the various components used to create a clause come from. An equally simple way to answer the question is to say that all those parts come from the lexicon. Lexical items are thus drawn from the lexicon, merged with one another and a clause is formed. Despite the availability of widely differing and competing views of grammar, this basic characterization remains at the heart of most approaches. But the consensus ends here, mainly because the various paths that can then be followed lead to incompatible and wildly divergent conclusions on the nature of linguistic representations. For instance, although we know that lexical items are drawn from the lexicon, the nature of the mechanisms by which the participants in an event come to occupy their structural positions and acquire their interpretation remains an open question. This area of linguistic research has been investigated in the last few decades within a certain domain called argument structure (AS) and, within the generative framework, there are two competing approaches (with variants). A long-standing approach is based on the assumption that it is the lexical meaning of a verb that determines, albeit indirectly, the basic properties of sentence

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structure at the level of verbal meaning, including asymmetric relations, thematic roles, case, and agreement; we refer to this as the lexicalist approach. An alternative approach claims that, to a large extent, the syntax itself establishes possible verbal meanings on the basis of the legitimate relations that can exist between syntactic heads, complements, and specifiers. The following chapters explore current issues and re-assess generally accepted premises on the relationship between lexical meaning and the morphosyntax of sentences in order to explore to what extent the syntactic architecture of the grammar can account for issues normally considered to be within the realm of (lexical) argument structure.

In this chapter, we offer remarks on the nature of argument structure designed to set the stage for the various contributions included in this volume. As such, they are not meant to exhaustively present the state of the art in this area of linguistic research, and the references cited here should be complemented by the ones found in the subsequent chapters. The last section of this chapter provides a short summary of the papers included in this volume.

2. THE ISSUE

Clearly, any complete formal theory of grammar (or syntax) must contain a proposal about AS, which accounts for how the lexical, syntactic, and semantic components interact to build the basic structure of sentences and determine their interpretation. AS is considered by many as a (sub)module of grammar responsible for the representation of verbal meanings and the projection of arguments. It has therefore been conceived as an interface level between lexical representation (of verbs) and the syntactic operations of structure building.

The obvious question that immediately arises is: what AS-relevant information is contained in lexical entries? Assuming that the possible answers to this question can be distributed along a continuum, each end of the continuum would be occupied by two radical approaches according to which all AS work is done by one module (lexicon or syntax), with very little contribution from the other module.

In other words, we need to determine what arguments are arguments of. Traditionally, they are taken to be arguments of the verb, and that is the explicit position many researchers take. Most dictionaries for instance include AS information in their entries for verbs. To illustrate, consider the well-known fact that many transitive verbs can be used intransitively (unergatively). A lexical approach is possible to handle such verbs. For the verb *eat*, for instance, Fellbaum and Kegl (1989) argue that two different lexical entries are needed — one transitive, the other intransitive (i.e., unergative) — to reflect the syntactic distinction between the two.

However, if the lexicon is assumed to represent idiosyncratic properties of lexical items, it must be concluded that lexical representations do not constitute the best option as the locus of such transitive–unergative alternations

given the fact that it certainly does not appear to be an idiosyncratic property of a limited number of verbs. This alternation is a pervasive possibility not only within certain particular grammars but also cross-linguistically. And if it is not a property of certain particular verbs, then it must be a property that is independent of lexical choice. As such, transitivity is best viewed as a grammatical property not a lexical property. The question becomes how to implement it in syntax and how far we go in excluding the lexicon from accounts of this and other types of alternations.

In addition, it has been argued convincingly that at least some instances of transitive verbs with unexpressed objects can be shown to involve syntactically represented null objects; Rizzi (1986), Raposo (1986) among many others. Thus the unexpressed object of *eat* appears to be available for a parasitic gap interpretation. In a parasitic gap construction, the null variable complement of a verb serves to license the null object of a second verb, as in the following classic example. In this sentence, the displaced object of the verb *file* can also be (but not necessarily) the object of *read*.

(1) Which article did he file before reading?

Without a displaced object, the sentence with the intended interpretation becomes ungrammatical.

(2) * He filed this article before reading.

Now if we replace *read* with *eat*,

(3) Which article did he file before eating?

the sentence (like the one in (1)) is ambiguous in that the verb *eat* can be taken either as unergative or as transitive with the interpretation that the article has been eaten. This can easily be accounted for if an empty element is present in the object position of *eat* to act parasitically on the trace in object position of the verb *file*. Now, in order to maintain a purely lexical account, having two options for *eat* — and *read* for that matter — (transitive and unergative) would not suffice. We would have to add a third option, namely *eat* with a syntactically represented unexpressed object. There would be three possibilities for the same verb: overt object, empty object, no object. To simplify the lexicon, the no-object option could be counted as simply an instance of the empty-object possibility, which would mean that there is only one lexical entry: *eat* transitive.

The burden of accounting for the alternation then shifts along to the syntax end of our continuum. The lexicon simply gives the possibility of an object and the syntax defines under what conditions it can be null or overt. Note, however, that the object remains an argument of the lexical verb in this view, which, as such, represents a hybrid (but still rather lexicalist) approach. A syntactic approach to this issue would be that the (in)transitive properties of *eat* or *read* are not stated in their lexical entry, but instead that the possibility of a direct

object is to be derived structurally. In other words, those properties depend on the particular kind of configuration in which the verb is inserted.

We can go even further toward syntax along the continuum. The idea that the arguments expressed in a sentence are arguments of the verb was disputed by Marantz's (1984) proposal that while objects are arguments of the verbs, subjects are not, and that subjects are licensed by a syntactically compositional constituent, namely the verb phrase. This idea was further articulated by Kratzer's (1996) theory of Voice (and also v in Chomsky (1995) and others) within a neo-Davidsonian syntactic and semantic approach.

A natural extension of the idea that subjects are not really arguments of the verb is to hypothesize that other arguments can be treated in a similar fashion. Both the applicative and possessor raising analyses of indirect objects and benefactives amount in fact, using Kratzer's term, to severing the indirect object from its verb (Borer & Grodzinsky, 1986; Harley 2003; Landau, 1999; Marantz, 1997; Pylkkänen, 2008, among many others). A similar fate befalls dative experiencers and ethical datives, and other nonstandard subjects (Cuervo, 2003; Fernández Soriano, 1999; Roberge & Troberg, 2009).

More recently, there have been proposals according to which direct objects are not licensed by verbs either (e.g., Borer, 2005; Bowers, 2010, Ramchand, 2008; Schein, 1993). While different authors base their claims on diverse empirical and theoretical arguments, the common idea is that direct objects require, like the other severed arguments, a special syntactic head (or independent predicate) to be licensed. Some work has proposed that surface objects can correspond to different types of underlying arguments, some licensed by the verb or root, others arguably licensed as specifiers (inner subjects) of small clauses, aspect phrases, or of verbal-functional heads. Within the generative (transformational) framework, this idea also crosses the boundaries between lexicalist and constructivist approaches, and is found in work by Armstrong (2011), Beavers (2011), Cuervo (2010), Hale and Keyser (1993, 2002), Harley (2005), Labelle and Doron (2010), Levin (1999), Mateu (2002), Zubizarreta and Oh (2007), among many others. Some arguments and counter-arguments for the thematic separation of objects from the verb are directly addressed by Lohndal in this volume. The licensing of direct objects — in their multiple guises of themes, patients, incremental themes, scales, effected objects, etc. — is currently a matter of deep controversy and underlies several of the debates within the area of AS, mainly because their severance from the verb leads us to the other end of the continuum: only syntax is responsible for AS, a view that is for many researchers too uncomfortably distant from the traditional approach.

3. THE QUESTIONS

One of the central questions in AS research, and in linguistic theory in general, is what are arguments arguments of. As stated above, several types of

arguments have progressively been claimed not to be true arguments of the verb. Although it seems that it is the syntax-driven approaches that have been the motivation and the engine of this movement against the idea that it is the verb that takes (up to three) arguments, lexicalist approaches have been making, either explicitly or implicitly, the same proposal for decades by decomposing the meaning of verbs into atomic basic predicates. Within lexicalist theories of event structure, it is mostly atomic predicates such as ACT, CAUSE, GO, BECOME, that actually take and license arguments, even if these predicates are not necessarily represented in the syntax (Chierchia, 1989; Jackendoff, 1990; Levin & Rappaport Hovav, 1995, 2005, among many others). The same applies to neo-Davidsonian approaches to sentence meaning based on compositional semantics rather than decomposition associated with lexical items. The only arguments, if any, that are left as true arguments of the verb or root are those that are not required by specific predicates in the semantic decomposition or by verbal-functional heads in the syntax. This is one of the conclusions drawn by Travis in this volume. It seems, therefore, that we all agree that (most) arguments are not arguments of the verb; an acknowledgment that generalizations on argument realization cannot be captured at the lexical, idiosyncratic level.

A related, and also central question in AS concerns the degree of (in)flexibility or lability seen in verbs, that is, the fact that many verbs can appear in various, divergent syntactic configurations. As noted by Levin and Rappaport Hovav (2005), the challenge for the lexicalist approach is the observed flexibility, while the lack of complete, unrestricted use of verbs in all configurations constitutes the challenge facing syntax-driven approaches. The detailed study of this flexibility has usually been tackled in subdomains rather than as a whole: argument structure alternations — pairs of variants, such as the causative alternation, the dative alternation, the active–passive alternation, the transitive–antipassive alternation, the transitive–reflexive alternation, etc. — have provided fertile ground on which to base, test, and refute hypotheses on argument structure and their consequences for linguistic theory more generally. From the lexicalist point of view, argument structure alternations constitute cases of tamed flexibility, which can be explained away, without resorting to polysemy, by proposing that one variant is basic (i.e., associated with the verb as a lexical item) and the other is derived by some operation performed on the basic structure, be it in the lexicon, in the syntax proper, or in some intermediate level. On the other hand, if it is shown that structural, nonderivational analyses of alternations are preferable, and even necessary, for verbs that participate in just two configurations, a stronger case can be made if verbs (roots) appear in multiple structures. The association of morphological verbal pieces with systematic changes in the verbal meaning obtained for the same root in sentential contexts has been presented as support for a syntactically articulated approach to AS. This is the position developed in Basilico's chapter on the transitive–antipassive (and other) alternations. The study of verbal structures and morphology in a variety of languages has greatly informed and enriched the discussion of

these issues. At the syntactic end of the continuum, verbs have no basic meaning beyond the encyclopedic meaning of the root. As a consequence, and in the absence of some general principles or language-dependant (possibly morpho-phonological) restrictions, roots are expected to freely appear in various configurations that are compatible with their meaning in a vague sense. Mateu and Acedo-Matellán elaborate this idea in their chapter on the manner/result complementarity. In this view, the meaning of verbs is always the result of semantic composition, the interpretation of syntactic, rather than lexical objects.

Ultimately, what is at stake in the debates on verb flexibility is the way verbal meanings are obtained; in particular, how much of the types of events expressed in sentences consists of opaque lexical semantics and how much is read-off compositionally from syntactic pieces and configurations; Armstrong's contribution to this volume discusses this in some detail.

The more the semantics of verbs and arguments becomes (de)compositional, and the more articulated syntactic analyses become, the more the two sides of the debate mirror each other. This does not mean, however, that the differences in approaches become irrelevant. Quite the contrary, it is at this stage in the development of each side that the deeper controversies reveal themselves, namely the issue of directionality of determination in the semantics–syntax debate, and the resulting radically divergent models of grammar.

The positions we take have profound implications and raise many more questions: (1) with respect to the various modules of grammar and possible interactions between them — Are there lexical rules? Is there an interface level between the lexicon and the syntax? Are there mapping rules from the lexicon to the syntax? Does syntax operate on vocabulary items with phonological content?; (2) concerning observed restrictions and limitations in productivity — Are there restrictions on structures, and derivations? Can they be accounted for in terms of interface requirements?; (3) about the locus of possible crosslinguistic variation — What is behind variation in availability and morphosyntactic expression of argument structure alternations? Is there variation in event-semantics?; (4) in terms of the representation of linguistic knowledge — Is everything we understand represented in our grammar? Are coerced interpretations somehow encoded in lexical or functional items? How crucial is the role of world knowledge?; and, finally, (5) for studies on the development of AS in language acquisition — What is needed in terms of input or innate knowledge for children to acquire their target grammar? Are there developmental stages specifically linked to AS?

4. THE PAPERS

Grant Armstrong's paper "On the Adjectival Component of Change of State Verbs in Spanish" probes a construction in colloquial Spanish in which what appears to be a subcomponent of a change of state verb can be expressed

separately from the verb through degree modification. The degree modifier *bien* is analyzed as linking up directly to the adjectival component of the verb, which provides evidence for the type of AS analysis proposed in works by Ken Hale and Jay Keyser since some parts of the lexical decomposition can be spelled out in syntax.

In "'Obliqueness' as a Component of Argument Structure in Amharic," Mark Baker examines a variety of arguments that cannot be analyzed as "direct," based on their behavior with respect to agreement and case-marking. He argues that analyzing them as complements of a phonologically null adposition (a PP) can account for their incapacity to satisfy the EPP property of T and therefore for the lack of agreement between these oblique arguments and T. In his conclusion Baker considers the challenge posed by his oblique/nonoblique dichotomy to constructionist approaches to AS, but offers a way in which these approaches can incorporate the distinction through a "friendly amendment."

In "The Antipassive and its Relation to Scalar Structure," David Basilico deals with the transitive–antipassive alternation in Inuit and develops an analysis in terms of an alternation in the scalar structure of a clause. He argues that the alternation is an instance of the result/manner interpretation of the verbal root. Like in Mateu and Acedo-Matellán, he captures verbal flexibility (consumption verbs such as *eat* as result verbs in *eat up*; change of state verbs such as *kill* as manner verbs in Inuit antipassive) as the different combinations of a root with a light verb in a specific syntactic configuration. Differences in morphology and in the way arguments are "added" to the structure are tied to differences in the syntactic heads.

In his chapter, E. Matthew Husband explores "Some Structural Analogies between Existential Interpretation and Telicity." It is a well-known fact that the quantization of objects is a key determinant of the telicity of events and that objects play a role in the availability of an existential interpretation for subjects of states, but a systematic comparison of the two has not previously been made. Husband argues that the parallels observed in the relevance of object type, particles, and case of the object in the behavior of events and states can be accounted for by relying on the quantization of objects and that this suggests a more unified theory of aktionsart. While Husband's paper does address directly the question of how objects are projected and/or first merged, his reliance on an extended VP structure for both states and events places his approach at the syntax end of the continuum.

Kyumin Kim's chapter "External Argument-Introducing Heads: Voice and Appl" focuses on the licensing and interpretation of external arguments within a constructionist framework. Kim argues against providing Voice with detailed featural content for (non)agentivity, as in recent influential work, and proposes that agentive and nonagentive external argument roles are mapped to different syntactic positions. She extends the inventory of functional argument-introducing heads to incorporate a new type of high applicative, Peripheral Applicative, which introduces nonagentive external arguments and can take as

complement an event that contains an agentive external argument (VoiceP). Data from Korean, English, and Georgian provide the empirical basis for the claim that Voice and (Peripheral) Appl are distinct both semantically and syntactically.

Terje Lohndal's chapter, appropriately titled "Toward the End of Argument Structure," discards the question mark in the title of this volume and falls squarely on the side of syntax along our continuum as it argues against the assumption that verbs take thematic arguments. Idioms, distributive readings, focus, and variable verbal adicity provide the empirical basis for the argumentation. The significance of this stance on AS for the syntax–semantics mapping is the object of Lonhdal's last section and leads him to conclude that the functional structure of the clause is the key component needed at that interface.

In "A Note on Applicatives," Tatjana Marvin brings into focus the advantages and the limits of applicative analyses of ditransitive constructions. Marvin investigates new data of ditransitive sentences in South Slavic languages that are ambiguous between a high and a low applicative interpretation. She observes that for a certain group of verbs the high applicative interpretation for the dative argument is not available. She discards the possibility of attributing the lack of ambiguity to a structural incompatibility of the group of verbs with the high applicative structure or interpretation. The only generalization that seems to group the verbs together is a root semantic one: the verbs that are not ambiguous belong to the *give*-type class. She concludes that applicative heads are sensitive not only to the syntactic type of complement (high applicatives taking vPs, low applicatives taking DPs) but that high applicatives are sensitive to some idiosyncratic semantic properties of the roots in their complements. This limit to the independence of functional heads should be incorporated into a theory of argument structure able to account for the observed restrictions.

In their chapter, "The Manner/Result Complementarity Revisited: A Syntactic Approach," Jaume Mateu and Víctor Acedo-Matellán discuss Rappaport Hovav and Levin's generalization on the manner/result complementarity. They argue that the fact that a verb cannot lexicalize manner and result at the same time is a morphosyntactic fact, arising directly from the impossibility for a root to undergo conflation and incorporation simultaneously (i.e., in the same syntactic structure). The authors argue that the notions of Manner and Result that are indeed complementary are semantically compositional. The notions of manner and result as types of meanings of roots are not complementary, and it is in fact roots that can express both (e.g., $\sqrt{CLIMB}$) that constitute the test case for their claims. Mateu and Acedo-Matellán conclude that the manner/result complementarity is the result of general syntactic and morphophonological principles and should therefore not be stipulated as a property of lexical semantic structures. In other words, they claim that the notion of verb that is subject to interpretation is a syntactic notion, the interpretation of a use of a root in a certain syntactic environment. Their work

is an example of the fruitfulness of the dialogue between work done within lexicalist and constructivist approaches to argument structure. It is also an example of a tendency in the field: to look for, and find, a morphosyntactic basis for generalizations originally expressed in terms of lexical semantics.

In their chapter, "Syncretism as PF-Repair: The Case of *SE*-Insertion in Spanish," Mercedes Pujalte and Andrés Saab push the envelope even further in depriving lexical information, and central AS notions such as Voice features from any relevant role in sentence-building operations. They derive the presence of reflexive morphology in Spanish impersonals, anticausatives, passives, and reflexives from the absence of a specifier for a light verb v specified for projecting an external argument ($v_{[EXT\ ARG]}$). This, in turn, is argued to depend on the lack of ϕ-features on C or v. By incorporating the Complementizer and Tense layers of sentence structure into issues of argument structure, this work extends the domain of inquiry beyond the now standard limits of *v*P or Voice. The result is not, however, that the domain of AS is extended; on the contrary, central issues in AS — such as argument structure alternations — are presented as epiphenomena arising from the various possible combinations of inflectional and subcategorization features on functional heads, and their interaction with well-formedness conditions at the PF interface.

Lisa Travis tackles the relationship between syntax and AS through an in-depth examination of external arguments in Malagasy and a comparison between "Arguments from the Root vs. Arguments from the Syntax." In Malagasy, there are direct correlations between the complexity of the verbal morphology found in a construction and the argument/event structure it conveys. Despite this observation, Travis argues that there are three types of external theta-roles, depending on which element assigns this role: v, the root, or a combination of both. So while the support of syntax may appear to be necessary for the realization of arguments, roots may also contain fully specified complex argument frames.

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2

ON THE ADJECTIVAL COMPONENT OF CHANGE OF STATE VERBS IN SPANISH

Grant Armstrong

ABSTRACT

The purpose of this chapter is to analyze the formal and interpretative properties of a construction in colloquial Spanish in which a change of state verb is repeated by an adjective in the presence of the degree modifier *bien* (e.g., *secarlo bien seco* = lit. "dry it good n' dry"). The analysis is presented within the framework of argument structure outlined in Hale and Keyser (2002), in which change of state verbs are decomposed into light verbal heads and adjectival complements. The main claim is that the degree modifier *bien* (= "really") is unique in its capacity to attach to the adjectival subcomponent of change of state verbs. Its presence in that position forces the adjectival complement to be spelled out due to a general ban on stranding adjectival degree modifiers. The proposal provides new evidence in favor of syntactically decomposing verbs into subcomponents that describe different aspects of their meaning and are responsible for how their arguments are licensed/interpreted. Recent

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research has demonstrated that internal subcomponents of verbs are syntactically active and may be modified (Levinson, 2010). The main contribution of the paper is that there are cases in which internal subcomponents that are modified must be spelled out.

Keywords: Change of state verbs, argument structure, sublexical modification, degree modification, multiple copy spell out

1. INTRODUCTION

In colloquial Spanish there is a construction in which verbs may be "repeated" by either a participle or an adjective. I use the word repeated in quotations because this participle or adjective is root-identical to the verb (Bosque, 1990; Demonte, 1991; Demonte & Masullo, 1999). Some examples from the literature are shown in (1).

(1) a. **Lav**ó la camisa bien **lav**adita. (Demonte, 1991)
Washed the shirt well washed.DIM
'She washed the shirt well washed'

b. **Camin**ó los tres kilómetros bien **camin**ados. (Demonte, 1991)
Walked the three kilometers well walked
'She (really) walked the three kilometers (well walked)'

c. **sec**arlo bien **sec**o (Bosque, 1990)
dry-it really dry
'to dry it really dry'

d. **limpi**arlo bien **limpi**o (Bosque, 1990)
clean-it really clean
'to clean it really clean'

For convenience, I will refer to these sentence types as VARI (Verb–Adjective Root Identity) constructions throughout the rest of this work. The presence of the participle or adjective in each VARI construction in (1) has been intuitively described as the exaggeration or emphasis of part of a VP's meaning without adding any new notions that are not already present in the denotation of the VP itself. For example, in (1a), the presence of *lavadita* (= washed.DIM), understood as a property of the *la camisa* (= the shirt), does not describe anything that is not already present in the denotation of the verb phrase *lavó la camisa* (= washed the shirt). Even without this participle, *la camisa* is interpreted as having the property of being "washed" by virtue of appearing as the object of the verb *lavar*. The basic question of why VARI constructions exist and how to account for them has not preoccupied too

many linguists from the descriptive or theoretical perspectives, so it is an important area to explore.

Many approaches to verb meaning and argument structure have proposed that what are superficially verbs belie a much more complex structure that can be decomposed into various subcomponents either in the syntax (Baker, 2001, 2003; Hale & Keyser, 1993, 2002; Marantz, 1997) or in the semantics (Dowty, 1979; Parsons, 1990; Rappaport Hovav & Levin, 1998). In this work, I argue that for some of the VARI constructions seen in (1), mainly those like (1c) and (1d), the adjective that "repeats" the verb is an instance in which a particular subcomponent of a verb's complex inner structure is realized phonetically. The conclusion I arrive at is that approaches to verb meaning and argument structure in which verbs like (1c) and (1d) are derived from syntactically active adjectives (Baker, 2001, 2003; Hale & Keyser, 1993, 2002) provide the most appealing way of accounting for both the interpretative and formal properties of VARI constructions.

I begin in Section 2 by describing some of the principal interpretative and formal properties of VARI constructions. Though there are both manner and result interpretations associated with the duplicating adjectival forms, I will limit myself to analyzing those that have a result interpretation in this particular work. In Section 3, I briefly discuss Hale & Keyser's (1993, 2002) approach to argument structure and lexical semantics and then use this as a basis to outline a hypothesis to account for the properties of VARI constructions. The main claim is that VARI constructions contain a degree modifier, BIEN (= "really"), that targets a syntactically active adjectival subcomponent of change of state verbs. It is argued that this modifier has a range of special properties that allow it to occur in this particular position. Its presence there then forces a situation in which the head of the adjectival subcomponent it modifies must be pronounced because adjectival degree modifiers cannot be stranded. The details of this analysis and some consequences that follow from it are presented in Section 4. Finally, in Section 5, a brief conclusion is offered.

2. INTERPRETATIVE AND FORMAL PROPERTIES OF VARI CONSTRUCTIONS

In this section I will briefly describe the interpretative and formal characteristics of sentences like (1). The characteristics that are treated are: (i) the obligatory presence of a modifier, usually BIEN (= "well" or "really"); (ii) the classes of verbs for which VARI constructions are most productive; and (iii) the communicative function of the VARI construction. I will not discuss certain formal properties of the adjective in VARI constructions such as agreement and the tendency to use diminutive morphology. I believe these follow naturally from the account outlined in Sections 3 and 4 but I leave the details for future research.

2.1. Modification

Apart from the root identity that can be seen in the underlined parts of the VARI constructions in (1), their other most notable characteristic is the presence of a modifier. As can be seen in (1), this modifier is most commonly BIEN (lit. "well"). The different kinds of modified participles and adjectives that can appear in VARI constructions are described below.

It should be mentioned that BIEN is ambiguous in Spanish, having both a manner interpretation (= "well") and, in colloquial speech, a degree interpretation (= "really") (Armstrong, 2011; Bosque, 1990, 1999). The semantics of BIEN depend on the nature of the element it modifies. For participles that have no property scale, it can only function as a manner modifier. This can be seen in example (1b), as there is no scale of "walkedness" that could act as a measurable dimension for the degree interpretation of BIEN to combine with. The sentence means that *the three kilometers* were walked *well*, perhaps at a good pace by the walker, not that they reached a high degree of "walkedness." On the other hand, for adjectives that have no implicit manner component, BIEN can only act as a degree modifier. This can be seen in (1d). Since there is no implicit event or manner component present in the adjective *seco* (= dry), BIEN modifies the property scale of "dryness" that is described by the adjective and is more appropriately translated as "really" than "well." Finally, there are some participles that are identical in form to simple property-denoting adjectives such as *cerrado* (= closed) (see Embick, 2004 for more on the nature of the shared forms of participles and simple adjectives). In these cases, BIEN may function as either a manner or degree modifier depending on whether the participle or the simple adjective is used.

(2) **Cerr**aron la puerta bien **cerr**ada.
They closed the door BIEN closed
(i) The door was closed *carefully* (manner; BIEN = 'well')
(ii) The door ended up closed *tight* (degree; BIEN = 'really')

I limit myself to investigating sentences in which BIEN functions as a colloquial degree modifier as in (1c), (1d) and reading (ii) of (2), so I will not treat unambiguous manner readings like those of (1b) in this particular work.

In addition to BIEN, there are also other degree modifiers that may appear in the VARI construction but none are as widely accepted. These include the degree intensifier *muy* (= very) and the comparative *más* (= more) (Demonte, 1991).

(3) a. %María **llen**ó la cisterna muy **llen**a. (% = variable judgments)
María filled the cistern very full
'María filled the cistern very full'

b. %**Llen**a la cubeta más **llen**a. (% = variable judgments)
Fill the bucket more full
'Fill the bucket up more'

Table 1: Types of VARI constructions.

VARI construction type	Modifier	Meaning description
Manner	BIEN (= well)	*Bien* functions as a manner modifier of a participle that describes the same event as the main verb Example: *bailar un tango bien bailado* (= dance a tango well danced)
Degree–Result	BIEN (= really)	*Bien* functions as a degree modifier of an adjective that describes the same result state that is entailed by the main verb Example: *secar la ropa bien seca* (= dry the clothes really dry)

Other degree words such as *demasiado* (= too), *bastante* (= quite), and (*un*) *poco* (= a bit) are decidedly odd and do not appear to be able to license the VARI construction at all.

(4) #**Llen**ó la cubeta demasiado / bastante / un poco **llen**a
He filled the bucket too / quite / a bit full

To sum up this section, Table 1 is provided that categorizes different kinds of VARI constructions according to the type of modifier that must mark the participle or adjective that repeats the verb. The second row represents the only VARI constructions that I will treat in the rest of the work.

2.2. Change of State Verbs

When BIEN is interpreted as a degree modifier in VARI constructions, it isolates a particular lexical semantic class of verbs: change of state. There are various formal classes of change of state verbs in Spanish that are illustrated below (see Koontz-Garboden, 2006 for more on formal classes of change of state verbs cross-linguistically).

Dry-type verbs are change of state verbs whose result state may be expressed by an adjective that is zero-related to a causative or inchoative verb. This adjective is what appears in the VARI construction as can be seen in (5).

(5) Esta ropa la **sec**ó bien **sec**a.
This clothing it he dried really dry
'As for this clothing, he dried it good n' dry'

Table 2: *Dry*-type change of state verbs.

Verb	Adjective	Participle
secar (to dry)	seco (dry)	secado (dried)
llenar (to fill)	lleno (full)	llenado (filled)
vaciar (to empty)	vacío (empty)	vaciado (emptied)
limpiar (to clean)	limpio (clean)	limpiado (cleaned)
despertar (to awaken)	despierto (awake)	despertado (awakened)

Table 3: *Break*-type change of state verbs.

Verb	Adjective	Participle
romper (to break)	roto (broken)	roto (broken)
congelar (to freeze)	congelado (frozen)	congelado (frozen)
cerrar (to close)	cerrado (closed)	cerrado (closed)
abrir (to open)	abierto (open)	abierto (opened)
quemar (to burn)	quemado (burnt)	quemado (burned)

Some additional verbs of the *dry*-type formal class are shown in Table 2. The third column demonstrates the formal difference between the adjective that describes the result state entailed by the verb and the participle that describes an event of change.

Break-type verbs are change of state verbs that have no independent adjective capable of expressing the result state entailed by the verb. Instead, the result state they entail is expressed by a participle. This is illustrated in (6).

(6) El niño **ro**mpió el juguete bien **ro**to.
The child broke the toy really broken
'The child broke the toy good n' broken' (i.e. to pieces)

Additional change of state verbs that make up the *break*-type class are illustrated in Table 3. Note that there is no formal difference between the adjective that describes the result state entailed by the verb and the verb's participle.

Finally, *fatten*-type verbs are overtly derived deadjectival verbs. These verbs entail a result state that is expressed by an adjective and that adjective is related to the verb through a derivational process of prefixation, suffixation or both. In (7), the adjective *gordo* (= fat) is verbalized by the prefix *en-*, creating the verb *engordar* (= fatten).

Table 4: *Fatten*-type change of state verbs.

Verb	Adjective	Participle
alargar (to lengthen)	largo (long)	alagardo (lengthened)
engordar (to fatten)	gordo (fat)	engordado (fattened)
endurecer (to harden)	duro (hard)	endurecido (hardened)
blanquear (to whiten/to bleach)	blanco (white)	blanqueado (whitened/bleached)
solidificar (to solidify)	sólido (solid)	solidificado (solidified)

(7) El cochino de los Martínez en**gord**ó bien **gord**o.
The pig of the Martínez fattened really fat
'The Martínez's pig got really fat'

Some verbs that belong to the *fatten*-type class are included in Table 4. In this case, the participle that expresses an event of change carries the derivational verbalizing morphology that the adjective lacks.

2.3. Putting Result States in Focus

VARI constructions have been likened to certain kinds of secondary resultative predications such as those in (8) in previous literature on the subject.[1]

(8) a. I froze the food solid.
b. she washed the shirt clean.

Each of the adjectives in (8) describes a state that comes about as a consequence of the event denoted by the main verb. Thus, they have something in common with the VARI constructions in (9).

(9) a. Hago papilla y me sale gran cantidad, pero la **congel**o bien **congel**ada . . .
I make purée and me come.out great quantity, but it I freeze really frozen
'I freeze it really frozen' (so it keeps for a longer period)
(http://www.drpez.net/panel/archive/index.php/t-127890.html)

b. Los trabajadores **limpi**aron la habitación bien **limpi**a.
The workers they cleaned the room really clean
'The workers cleaned the room really clean'

[1]Demonte (1991) and Demonte & Masullo (1999) call them pseudo-resultatives, grouping them with secondary predicates such as *pile the pillows* ***high***, *braid one's hair* ***tight***. Recent work by Levinson (2010) suggests that pseudo-resultatives and VARI constructions are different. The VARI constructions analyzed here would be most appropriately categorized as "weak" resultatives that involve modification of a result state that is entailed by the main verb as in (8a) (Mateu, 2010; Washio, 1997).

In spite of these superficial similarities, there are various reasons to believe that secondary resultative predication and VARI constructions are different. First, it has been shown that Romance languages systematically lack the kind of secondary resultative predicates in (8) (Mateu, 2000; Snyder, 1995; Talmy, 1985; Washio, 1997) and second, while the adjectives in (8) add information that is not entailed by using the VP alone, those in (9) do not. This leads to a question regarding the basic communicative function of sentences like (9): if the underlined adjectives in (9) are repeating something that the VP already entails on its own, then what is the reason for using them at all? I contend that an answer to this question is that the presence of BIEN in VARI constructions focalizes the result state portion of a verb's internal structure in a particularly emphatic way. Thus, the difference between using a VP alone and a closely related VARI construction has to do with pragmatics and information structure.

There are a few reasons to believe that the BIEN-A constituent is the focus of a VARI construction. The first pertains to the special intonation that is applied to BIEN. In all VARI constructions, BIEN is what carries the nuclear stress of the sentence, which is illustrated below by capitalizing it. I have attempted to capture the precise effect it has on the sentence by using *good n'* instead of *really* in the translation, which I believe gets at the colloquial and emphatic function that the BIEN-A constituent has. This translation will be used from here on.

(10) a. Hago papilla y me sale gran cantidad, pero la **congel**o BIÉN **congel**ada . . .
I make purée and there is a lot of it, but it I freeze REALLY frozen
'I freeze it good n' frozen' (so it keeps for a longer period)
(http://www.drpez.net/panel/archive/index.php/t-127890.html)

b. Los trabajadores **limpi**aron la habitación BIÉN **limpi**a.
The workers cleaned the room REALLY clean
'The workers cleaned the room good n' clean'

Second, when another constituent in the sentence is in focus, the BIEN-A constituent becomes severely degraded. This is shown in (11).

(11) Context: Who cleaned the room?
*LOS TRABAJADORES la **limpi**aron BIÉN **limpi**a.
THE WORKERS it cleaned REALLY clean
Intended: 'The workers (were the ones who) cleaned it good n' clean'

If focalized constituents compete for a syntactic position (Rizzi, 1997) and a particular type of intonation, it makes sense that sentences like (11) would be degraded if BIEN-A is a focalized constituent. Finally, there is evidence that BIEN-A may appear in Rizzi's (1997) left periphery as a focalized constituent; for example, immediately adjacent to a left-dislocated topic as in (12).

(12) La habitación, BIÉN **limpi**a la **limpi**aron los trabajadores.
The room REALLY clean It cleaned the workers
'As for the room, good n' clean (was the degree to which) the workers cleaned it'

In this section it has been argued that VARI constructions are not semantically redundant. Even though they involve an adjective that describes the exact same state that is entailed by the main change of state verb, the overall effect of modification plus the duplicating adjective is to focalize the result state entailed by the verb.

3. BACKGROUND AND PROPOSAL

In this section, the syntactic approach to argument structure and lexical semantics proposed by Hale and Keyser (1993, 2002) is outlined with specific attention given to deadjectival change of state verbs. This framework is then used as the basis for the proposal of a working hypothesis regarding the structure and interpretation of the VARI construction.

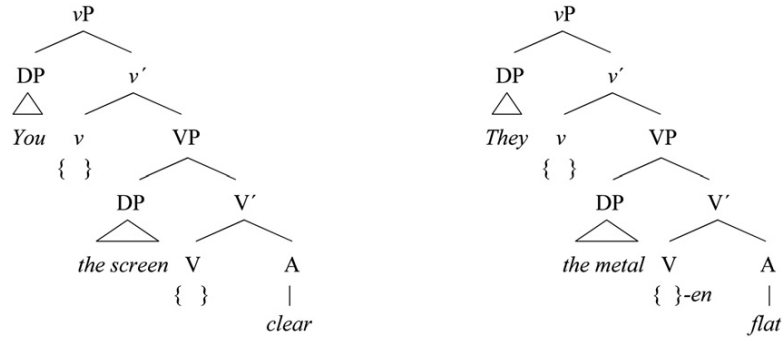
3.1. Lexical Decomposition as Syntax

In a series of evolving work, Hale and Keyser (1993, 2002) develop the hypothesis that the representation of a verb's basic meaning and argument structure is itself a syntax (l-syntax), subject to largely the same principles that are operative in sentential syntax. One of the objectives of the research program is to understand semantic regularities among classes of verbs in terms of the lexical heads of which they are composed. Deadjectival verbs comprise one such class.

(13) Deadjectival Verbs
clear, *redden*, *flatten*, *cool*, *dry*, *clean*, *thin*, *widen*

Hale and Keyser (1993, 2002) explore the idea that all of the verbs in (13) are *syntactically* derived from adjectives. The main reasons for this are obvious as many of the verbs are root-identical to adjectives (*clear* and *dry*) and others are clearly derived from an adjectival core with the suffix *-en*. More important is that all of these verbs, when used transitively, have similar meanings that can be paraphrased as "cause to become *adj*." For example, any transitive use of the verb *redden* can be generally understood as "cause to become *red*." The main proposal is that these shared meaning components have a structural explanation: phonologically empty "inchoative" verbs take adjectives as complements and those adjectives become verbs by head movement. The overall idea is couched in the VP shell analysis (Chomsky, 1995; Kratzer, 1996; Larson, 1988) such that the grammatical subject that is interpreted as agent (or initiator of the relevant action) is introduced by a second verbal head above the VP, labeled *v* here. This is shown in (14).

(14) Structural Representation of Verbs in (13)
a. Deadjectival Verbs (-Ø)
'You cleared the screen'
b. Deadjectival Verbs (-en)
'They flattened the metal'



The structures in (14) are interpreted according to a set of rules by which meaning can be read off of structural configurations. The internal part of the structure is interpreted according to the rules in (15), which indicate that an A complement of V is interpreted as a change of state and that the argument in the Spec of V in such a configuration is interpreted as the undergoer of the change of state.

(15) a. CHANGE (change of state)
[[Spec] V [A]]: V(e)→A(s)

b. Undergoer of CHANGE of state[2]
[[Spec = x] V [A]]: $\boldsymbol{x}$> (e→s)

A second set of rules is used to indicate how the external (v) part of the structure is interpreted. A causal relation is introduced by merging v with V and the argument in Spec v is interpreted as the initiator of this causal relation. This is shown in (16).

(16) a. CAUSE (event causes event)
[v [V]]: $v(e_1)$→V(e_2) [e_1 CAUSES e_2]

b. Initiator of CAUSE
[[Spec = x] v [[Spec] V]]: $\boldsymbol{x}$> (e_1→e_2)

The point of this section has been to demonstrate the primary semantic motivations for structurally decomposing verbs. Following Hale and Keyser, I assume that certain regularities among verbal meaning and the interpretations of their arguments may be attributed to shared structural components

[2]As pointed out by an anonymous reviewer, this particular view of the position of the internal argument of deadjectival verbs contrasts with those that generate it in a specifier of a small clause complement of a light verb (Harley, 2005). For consistency, I will follow Hale and Keyser's (2002) view here. However, I do not believe that it makes a difference one way or the other for the analysis of VARI constructions that is proposed in this chapter since the object is in a similar structural relation to the adjectival complement in either case.

among verb classes. In the next section, head movement within l-syntax is discussed.

3.2. Head Movement

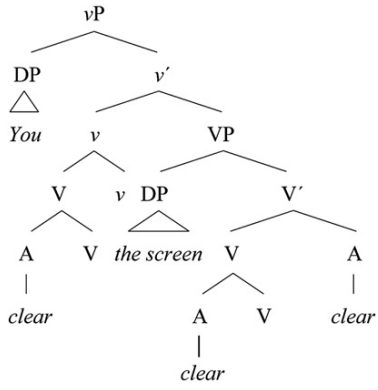
What is clear from the discussion above is that there must be some principled way in which all of the information that goes into a given verb gets "packaged" into that verb. For some verbs, there is not a one-to-one correspondence between the number of lexical heads that compose them and the number of visible derivational morphemes they carry. For example, the transitive verb *clear* is proposed to have three different heads, yet it is pronounced as a monomorphemic verb. This is due to the fact that the material that is specified in the heads that dominate the insertion site of the root is either *conflated* or *incorporated* into that root due to restrictions that are imposed on the structure by the phonological interface. The technical differences between these two notions have been a difficult issue for many researchers working within this type of framework. Descriptions of them are provided in (17).

(17) **P-signatures**: All lexical terminal nodes H must contain a p-signature, or "the information that will permit H to be properly associated in syntax with the appropriate forms of vocabulary items drawn from the lexicon" (Hale & Keyser, 2002: 78):

(i) **Conflation**: defective H can receive a p-signature through copying the p-signature of its strict complement (i.e., the *lexical* head it selects)
(ii) **Incorporation** (Baker, 1988): defective H can receive a p-signature through the movement and adjoining of a lower head to it

The notion of *conflation* has been reduced to selection by Hale and Keyser (2002) and characterized as compounding in Haugen (2009), while *incorporation* is taken to be syntactic head movement (Baker, 1988; Hale & Keyser, 2002; Haugen, 2009). The two processes have been implicated for the derivational mechanisms that give rise to different classes of verbs. For example, Hale and Keyser (2002) claim that *conflation* accounts for the relation between verbs like *dance*, *laugh*, *box*, and *saddle* and their homophonous nouns, and Haugen (2009) makes a similar claim for manner verbs like *hammer*. On the other hand, *incorporation* has been taken to be the process that accounts for the relation between verbs like *clear* and *dry* and their homophonous adjectives. Taking these ideas into account, the reason that a sentence like (14a) is pronounced as a monomorphemic verb is because the A head moves to both V and *v*, producing a chain of head adjunction structures shown in (18).

(18)



Because there is a movement chain, the inferior copies of it may be deleted based on a combination of the linear correspondence axiom (LCA — Kayne, 1994; Nunes, 2004) and the government transparency corollary (GTC — Baker, 1988). Linearization is based on asymmetric c-command, so a head H_1 that asymmetrically c-commands another head H_2 will be pronounced to the left of H_2. In a standard head movement chain, linearization proceeds in a local fashion (at phase boundaries, or cyclic domains). In the case of the verbs that are of interest here, the root is inserted as A and this is copied and left adjoined to V. This newly formed complex head contains all of the information that is contained by A and it asymmetrically c-commands A, and thus A is deleted. The same could be said of the next step whereby V is copied and left adjoined to *v*, creating the following morphological structure once the *v*P has been assembled.

(19) [*clear*-A [V [*v*]]]

Since the A has been verbalized, the structure in (19) will only be able to combine with inflectional morphology from the verbal domain when it is spelled out; it can no longer be spelled out as an adjective. The identical nature of the verb *clear* and the adjective *clear* obscure this fact in English. It can be illustrated by the presence of *-en* in a verb like *flatten*, which determines the range of inflectional morphology that the newly created word may combine with.

In this section the packaging of verbs into phonological units that appear less complex than their internal structure suggests has been reviewed. The main concern of this chapter is the notion of *incorporation* whereby an A becomes a V through head movement.

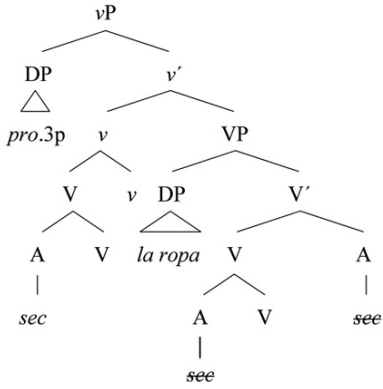
3.3. VARI Constructions: A Hypothesis

To end this section I will offer a hypothesis about VARI constructions based on what was presented in Sections 3.1 and 3.2. Taking that discussion into consideration, an ordinary change of state verb like *secar* in (20) has the

internal structure shown in (21). Head movement generates a chain, and inferior copies of that chain are deleted.

(20) Secaron la ropa
They dried the clothing
'They dried the clothing'

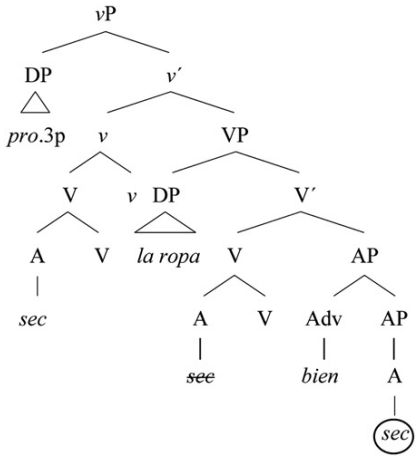
(21)



My hypothesis is that VARI constructions involve the exact same internal structure as (21). The main difference is that there is a degree modifier, BIEN (= really), in the numeration. So, the sentence in (22) has the structure in (23), where BIEN attaches to the AP complement of the verb and is interpreted as a degree modifier.

(22) **Sec**aron la ropa bien **sec**a.
They dried the clothing really dry
'They dried the clothing good n' dry'

(23)



The intuition here is that there is something about BIEN in this particular position that forces the material in A to be spelled out (indicated by the circle) rather than deleted (crossed out), giving rise to the reduplicating effect that gives VARI constructions their most notable characteristic. This idea provides an immediate explanation for some of the most important properties of the VARI construction. First, the fact that a verb and adjective are root-identical is explained because copies of the same root are what provide the input for forming the verbal or adjectival stem, respectively. Second, the adjective is predicated of the internal argument of the verb in (23); thus the agreement that is seen on the adjective can be handled in the same way as it is handled for any predicative adjective. Third, the reduplicating effect that characterizes the VARI construction is linked to the presence of a modifier, which would explain why modification is a requirement for the construction's appearance.

Despite these intuitively appealing consequences of the hypothesis outlined above, the idea also raises some important questions.[3] The first set of questions concerns the nature of modification in syntactically decomposed structures like (23): (i) why does the degree modifier attach to AP and not VP? The second set of questions concerns the "specialness" of BIEN: (ii) what is so special about BIEN that makes it the only degree modifier to productively mark the VARI construction? and (iii) why are other degree modifiers such as *muy* (very), *demasiado* (= too), *bastante* (= quite), and (*un*) *poco* (= a little) not as productive or simply not possible licensers of the VARI construction? A third set of questions concerns multiple copy pronunciation: (iv) why does the presence of BIEN force the A head to be pronounced? This appears to be a stipulation since modification is not generally taken to be a trigger for the obligatory pronunciation of an inferior copy of a chain (Bošković & Nunes, 2007). A fourth set of questions relates back to the different formal classes of change of state verbs outlined in Section 2.2: (v) how does this analysis account for the fact that the VARI construction is productive for *break*-type verbs, which do not have an independent adjective capable of expressing the result state they denote? (Koontz-Garboden, 2006). These questions are addressed in turn in the next section.

4. VARI CONSTRUCTIONS AS MULTIPLE COPY PRONUNCIATION OF DECOMPOSED VERBS

This section offers support for the hypothesis presented in Section 3.3 by addressing the four areas of questions presented above. In Section 4.1, a brief description of the nature of modification in syntactically decomposed structures is presented. In Section 4.2, the unique contribution of BIEN as a degree modifier is discussed and is linked to the idea that it can occur in multiple positions within a

[3]I thank the two anonymous reviewers for picking up on many of the points addressed in Section 4.

decomposed verb without being semantically redundant. In Section 4.3, the reason why the A head is pronounced in VARI constructions is explored. Finally, in Section 4.4, a unified analysis of all change of state verbs, whether deadjectival or not, is supported based on the idea that participles can be used as simple adjectives for some roots (Bosque, 1990, 1999; Embick, 2004; Parsons, 1990).

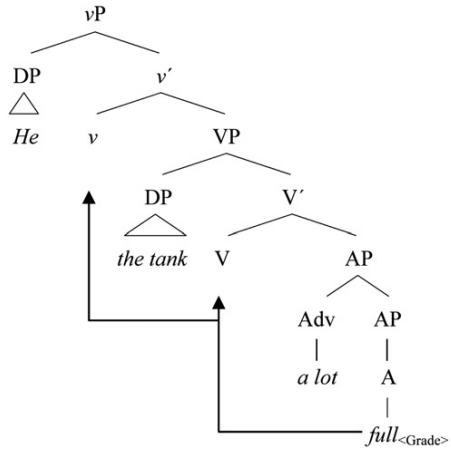
4.1. Degree Modifiers in Change of State Verbs

Returning to the hypothesis proposed in the previous section, the structure in (23) assumes that an internal subcomponent of the verb, A, is syntactically active and can be modified. The idea that the syntactically decomposed subcomponents of verbs may be modified has been explored in a number of different works (Bosque & Masullo, 1998; Levinson, 2010; von Stechow, 1996). There are two ideas regarding how the gradability associated with change of state verbs can be modified. The first claims that that degree modifiers attach to the AP in the decomposed structure of change of state verbs (Baker, 2003), while the second claims that degree modifiers attach to the VP but are semantically licensed by the presence of the A head and its functional superstructure (Bosque & Masullo, 1998; Gumiel, Nieto, & Pérez, 1999).[4]

The proposal outlined in Baker (2003) is basically identical to what is seen in (23). The gradability of the entire verb is due to a <Grade> theta role (a degree argument) introduced by the A head that is bound by the degree modifier of the AP. The sentence in (24) would be analyzed as in (25).

(24) He filled the tank a lot.

(25)

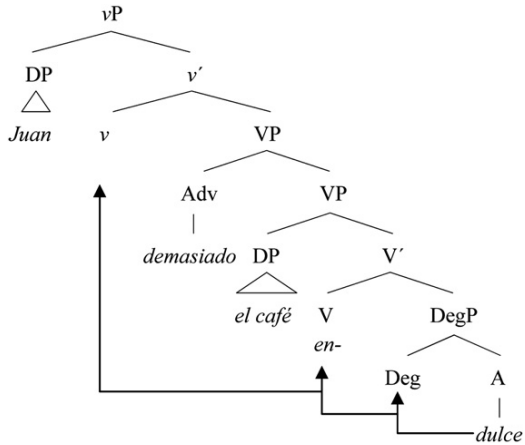


[4]Other approaches propose that the meaning of change of state verbs is similar to that of a gradable adjective but that the two categories are not related derivationally in the sense described here. Modification by degree words in both verbs and adjectives is subject to different combinatory mechanisms. As a result, degree modification in verbs is not due to the verb's containing a syntactically active adjectival component (Kennedy & Levin, 2008; Piñón, 2005).

Baker (2003) argues that the degree modifier must modify AP in order to locally bind the <Grade> role introduced by the A head. A positive consequence of this proposal is that it explains why argument-like adverbial expressions that modify degrees are generated low in the structure and appear to the right of the object. On the other hand, Gumiel et al. (1999), following work by Bosque and Masullo (1998), argue that the underlying adjective contains a functional superstructure consisting of a Deg head and that this entire functional superstructure is incorporated into the verb. Degree modifiers attach to VP and are licensed as verbal adjuncts due to the presence of the incorporated degree argument.

(26) Juan endulzó demasiado el café. Gumiel et al. (1999)
Juan sweetened too much the coffee
'Juan sweetened the coffee too much'

(27)



The two proposals are quite similar, but there are some important nuances to consider. The first difference concerns the nature of incorporation as a process that applies strictly to lexical heads and disallows the presence of intervening functional material (Li, 1990).[5] Note that only Baker's (2003) analysis is compatible with this restriction since there is no intervening Deg head between the V and the A complement. The second difference is a related one that concerns selection. In Baker's (2003) structure, (25), V is in a selectional relation with A, not Deg, while in Gumiel et al.'s (1999) structure (27), V is in a selectional relation with Deg, not A. Intuitively, it would be desirable to represent V as selecting the lexical category A rather than functional superstructure.

The simplest way to address these issues would be to adopt a version of Baker's (2003) structure in (25). On this view, there is no inflectional material that intervenes between incorporating A complement and selecting V, so the

[5]I thank an anonymous reviewer for bringing this fact to my attention.

lexical nature of incorporation is captured. It is also possible to maintain the intuitive selectional relationship that exists between V and A. There is a complicating factor that would have to be explained if Baker's (2003) view is adopted though. For Baker (2003), verbal degree modifiers, or argument-like adverbs, always attach low in the structure (to AP) in order to bind the degree argument that is present on the A head. This seems to work fine for English as modifiers like *a lot* are always to the right of the object. In Spanish, however, the same degree modifiers appear to the left of the object of the verb with neutral intonation, suggesting that they adjoin to the VP as is argued Gumiel et al. (1999) and not lower than the object as in Baker (2003).

Consider the examples in (28) where the modifiers *mucho* (= a lot) and *demasiado* (= too much) may appear in either a neutral position to the left of the object (28a) or an intonationally marked position to the right of the object (28b).

(28) a. Juan llena mucho / demasiado el tanque.
Juan fills a lot / too much the tank

(i) The tank becomes very/too *full*
(ii) The tank is filled many/too many times

b. Juan llena el tanque mucho / demasiado.
Juan fills the tank a lot / too much

(i) The tank becomes very/too *full*
(ii) The tank is filled many/too many times

In either position both modifiers can be interpreted as degree intensifiers or as quantificational adverbs of "number of times" (= frequency interpretation). I propose that the two interpretations and positions be accounted for by combining aspects of both Baker's (2003) and Gumiel et al.'s (1999) proposals. The degree readings of each modifier involve attachment to VP (either left or right adjoined) as in Gumiel et al. (1999). By attaching to the VP, the modifiers fix a value of the scale associated with the A complement that incorporates into V. The frequency readings arise due to attachment higher in the structure (perhaps to TP or another functional head). Following work by Kennedy and McNally (2005), I will assume that if no degree modifier is present within the VP, then the value of the degree argument of the A complement is fixed by context to a contextually given standard. I have thus adopted a mixed analysis for degree modification in Spanish change of state verbs, whereby the incorporating adjective has no functional material and degree modification targets the VP and not the AP.

4.2. On the Unique Character of BIEN

Continuing the discussion above, at first blush the modifier BIEN appears very similar to other degree modifiers with a few slight differences. One of those

differences is that with gradable verbs, BIEN can be interpreted as either a *manner* (as opposed to an adverbial quantifier) or degree modifier. Both of these interpretations are possible in each of its two positions: (i) to the right of the verb and (ii) to the right of the object.

(29) a. Secaste bien la ropa.
You dried well the clothing
(i) The clothing was dried with care and skill
(ii) The clothing became very dry

b. Secaste la ropa bien.
You dried the clothing well
(i) The clothing was dried with care and skill
(ii) The clothing became very dry

The interpretations of (29) could be accounted for as follows. As a degree modifier, BIEN adjoins to VP and fixes the value of the scale associated with the incorporating A complement just as *mucho* (= a lot) and *demasiado* (= too much) do on their degree readings. In addition to adjoining to VP, BIEN may also adjoin to any *v*P containing a manner component that may license it. As a *v*P modifier, it describes the nature of the action performed by an agent. While separating the degree and frequency readings of modifiers like *mucho* and *demasiado* is fairly straightforward, it is more difficult to do so for the two readings of BIEN. For example, it seems that in an example like (29) that one reading of BIEN would implicate the other. Typically, if clothing is dried well, then it ends up really dry. The inverse also seems to hold: if clothing is really dry, then it is likely that it was dried well (if the action was performed by an agent). The degree reading of BIEN can be isolated in inchoatives like (30) where there is no agent.

(30) La ropa se secó bien con el sol.
The clothing SE.3s dried well with the sun
'The clothing dried well in the sun'

In (30), there is no agent and the only interpretation associated with BIEN targets the degree of dryness that the clothing reached from being out in the sun. In this case, BIEN could only attach to VP since there is no manner component present in the *v*P layer of the extended projection of the verb.

Despite these similarities between degree modifiers such as *mucho*, *demasiado*, and BIEN, there is one property that separates them: the capacity to productively license the VARI construction. Consider the difference in acceptability between the following sentences in (31), which were originally presented in Section 2.1. It should be noted that *mucho* cannot modify adjectives and is expressed as *muy* (= very) in such contexts (see Bosque, 1990, 1999 for a discussion of the relation between the two words).

(31) a. %Juan **llen**ó el tanque muy **llen**o. (% = variable judgments)
Juan filled the tank very full

b. #Juan **llen**ó el tanque demasiado **llen**o. (# = semantically odd)
Juan filled the tank too full

c. Juan **llen**ó el tanque bien **llen**o.
Juan filled the tank really full
'Juan filled the tank good n' full'

In Section 2.3, the tight connection between focus and the BIEN-A constituent in the VARI construction was addressed. The nature of this focalization has to do with highlighting the fact that the state entailed by the verb holds to a degree that the speaker wants the addressee to be aware of in addition to marking the sentence as belonging to a more colloquial register. These same meaning components are not added by *muy* or *demasiado*. The nuances added by BIEN in the VARI construction are identical to the ones it adds when used as a degree modifier in adjectives that have no verbal forms as in (32).

(32) Un hombre muy / demasiado / bien alto
a man very / too / really tall
'a really tall man'

While *muy* and *demasiado* simply fix the value of the tallness scale associated with adjective to a particular high standard, BIEN does this in addition to adding an emphatic and colloquial quality to the entire expression that is lacking in the presence of the other modifiers.

I would like to argue here that the reason why BIEN is the most common marker of the VARI construction is because it adds pragmatic and information structure nuances to the adjectival expressions it modifies that are absent in its use as a verbal modifier. Other degree modifiers such as *muy/mucho*, *bastante*, *demasiado*, and *(un) poco* are essentially identical in their use as adjectival and verbal adjuncts. This observation has important consequences for VARI constructions as I believe the difference between (33a) and (33b) can now be understood as a difference in attachment site of BIEN.

(33) a. Limpió bien la casa.
He cleaned well the house
'He cleaned the house well/a lot'

b. **Limpi**ó la casa bien **limpi**a.
He cleaned the house really clean
'He cleaned the house good n' clean'

In (33a), BIEN attaches to either *v*P or VP and has the manner or degree interpretation associated with these particular attachment sites. The manner

reading characterizes the cleaning as being performed skillfully and thoroughly and the degree reading describes the amount of cleanliness that holds of the house. In (33b), BIEN attaches to the AP and adds a particular emphatic and colloquial nuance to the expression in addition to specifying the degree of cleanliness that holds of the house. The presence of BIEN in the AP also forces the adjective to be spelled out in (33b), something that is not necessary in (33a) as BIEN is a VP modifier (I discuss the reasons behind this in more detail in Section 4.3). Imagine that the same possibilities also existed for *mucho*/*muy* and *demasiado*. We would expect (34b) and (35b) to be perfectly acceptable, contrary to what the actual judgments suggest.

(34) a. Limpió mucho la casa.
He cleaned a lot the house
'He cleaned the house a lot'

b. %**Limpi**ó la casa muy **limpi**a.
He cleaned the house very clean
'He cleaned the house very clean'

(35) a. Limpió demasiado la casa.
He cleaned too much the house
'He cleaned the house too much'

b. #**Limpi**ó la casa demasiado **limpi**a.
He cleaned the house too clean
Intended: 'He cleaned the house too clean'

Since the adjectival modifiers *muy* and *demasiado* add nothing to the expression that is not already present when the verbal modifiers *mucho* and *demasiado* are used, there is a certain redundancy associated with sentences like (34b) and (35b). What is needed now is a way to explain why the sentences in (34a) and (35a) sound more natural while those in (34b) and (35b) sound redundant. I claim that when two derivations yield identical LF objects, then the more economical PF object is the one that is preferred by speakers. Following Landau (2006), I take PF economy to be maximal deletion of all copies that are not necessary for interpretation. The consequence of assuming this is that the use of *mucho* and *demasiado* as verbal modifiers will be the more economical and thus preferred option because in this position they do not force the pronunciation of the A head. This situation does not arise with BIEN, however, because there is no LF redundancy between the use of it as a VP or AP modifier.

Given what we have just seen, I propose that as an AP modifier BIEN carries a lexically specified focus feature that explains its inseparable link to the notion of emphasis. This is illustrated in Table 5 through capitalization and a focus feature.

Table 5: Degree modifiers in Spanish.

TP or *v*P modifier	VP degree modifier	AP degree modifier
mucho (many times)	*mucho* (a lot)	*muy* (very)
demasiado (too many times)	*demasiado* (too much)	*demasiado* (too)
bien (well)	*bien* (well/really)	BIEN $_{[+FOC]}$ (really)

The consequence of this claim is that BIEN, as opposed to other degree modifiers, may attach to either VP or AP within the decomposed structure of a change of state verb without creating redundant objects to be evaluated by the C–I interface. Other degree modifiers such as *mucho* and *demasiado* may attach to VP or AP as well but in doing so produce structures that are semantically redundant. The two derivations in such cases are then evaluated based on PF economy, leading to a preference for the VP attachment site. The idea that economy considerations enter into the evaluation of the derivations associated with the different possible attachment sites of degree modifiers rests crucially on the claim that the attachment of a degree modifier to AP in the decomposed structure forces pronunciation of the A head. The question is why this should be the case. This is addressed in the next section.

4.3. On Pronunciation of Multiple Copies

The literature on the pronunciation of multiple copies provides us with a number of possible reasons why numerous links of a chain might be pronounced, which deviates from the maximal economy of pronouncing a single copy. In the case of VARI constructions, it is the presence of the modifier BIEN$_{[+FOC]}$ that apparently forces a lower copy of a chain to be pronounced. There are two areas that represent possible avenues to explore why this might be the case: (i) the modifier fuses with the A head, forming a new word that is invisible to the linearization mechanism that applies to the chain and deletes lower copies (Bošković & Nunes, 2007; Nunes, 2004) or (ii) there is a general ban on adjectival modifier stranding in Spanish that forces the presence of an A head (Hale & Keyser, 2002; Haugen, 2009).

The first hypothesis can be stated as follows: if the modifier BIEN$_{[+FOC]}$ and the A head form a complex word, then the A will be invisible to the linearization algorithms that apply to chains since the lowest copy contains an element (the BIEN-A word) that is not present in the higher links of the chain. There is evidence that BIEN can function as a prefix-like modifier, forming new words with some participles as in (36).

(36) a. bienaventurado = blessed
b. bienhablado = well-spoken

c. bienmandado = obedient
d. bienvenido = welcome

It could very well be the case that BIEN$_{[+FOC]}$ forms a complex word with the A head in change of state verbs, giving rise to the reduplicating effect that is seen in VARI constructions. However, the cited examples all involve the manner use of BIEN. There is no independent evidence that I know of from the adjectives that incorporate to form change of state verbs of BIEN forming complex words with them. So even though BIEN is unique among degree modifiers in that it can be used as a prefix-like modifier, it does not seem to be the best explanation for why it is responsible for the realization of a lower copy in VARI constructions.

The second hypothesis is based on the idea that there is a more general language-wide ban on the stranding of degree modifiers of adjectives. If this is the case, then we would expect to find independent evidence that adjectival degree modifiers cannot be stranded. Consider the ellipsis constructions in (37) of both attributive and predicate adjectives.

(37) a. *Allí hay un hombre bien alto$_i$ y allá hay otro muy ___$_i$
There is a man really tall and over there is another very
Intended: There's a really tall man there, and over there is another very (tall one)

b. *Esta casa está un poco sucia pero aquella está bien ___$_i$
This house is a bit dirty but that one is really
así que habrá que limpiarla.
so will have to clean-it
Intended: This house is a bit dirty but that one is really (dirty) so we'll have to clean it

In both of these cases, the intended readings involve an adjectival head that has been elided, leaving the degree modifier as the sole component of the AP. That such sentences are impossible suggests that there may be a general ban on stranding of adjectival degree modifiers. Further evidence that leads to the same conclusion comes from the impossibility of extracting adjectival heads over degree modifiers as questions or topics, as seen in (38).

(38) a. *[De qué color]$_i$ está bien ___$_i$ el cielo? Está bien rojo.
Of what color$_i$ is really ___$_i$ the sky? It is really red
Intended: *What color is the sky a lot of (right now)?

b. *Vacía$_i$, esta recámara está muy ___$_i$
Empty, this room is very ___$_i$
Intended: 'As for empty, this room is very *(much so)'

The data in (37) and (38) suggest that there is something category-specific about degree modification of an AP that does not permit the modifier to be stranded if the adjectival head is elided or displaced. This hypothesis appears to have much more plausibility, and I will assume that it is the primary reason for which the adjectival head in VARI constructions is spelled out.

We are now in a position to understand the mechanisms, both interpretative and formal, that give VARI constructions their signature properties. Consider the examples in (39).

(39) a. Vaciaron bien las cajas.
They emptied really the boxes
'They emptied the boxes a lot'
[$_{TP}$ vaci-aron ... [$_{VP}$ [bien] [las cajas] ~~vaci-A-V~~ [$_{AP}$ ~~vaci-A~~]]]

b. Vaciaron las cajas BIEN$_{[+FOC]}$ vacías.
They emptied the boxes really empty
'They emptied the boxes good n' empty'
[$_{TP}$ vaci-aron ... [$_{VP}$ [las cajas] ~~vaci-A-V~~ [$_{AP}$ [BIEN$_{[+FOC]}$] vaci-A]]]

In (39a), as a degree modifier, BIEN attaches to VP, incorporation of A into V occurs and this step forms part of the chain that is created due to successive movement of the verb to high inflectional categories. Since deleting all of the lower copies of this head movement chain does not clash with any interpretative or phonological requirements imposed on the structure, this is what occurs since it is the most economical output. Deleted copies are crossed out in (39a). In (39b), the modifier is BIEN$_{[+FOC]}$, which can only attach to AP. Its presence in this projection has consequences for the evaluation of the movement chain at PF. Since the stranding of adjectival modifiers is generally banned in Spanish, this forces the lower copy of the root in the A head to be pronounced, so it is not crossed out in (39b).

As argued in the previous section, the variability in the attachment site of BIEN stems from the fact that there are two instances of BIEN whose different positions give rise to slightly different pragmatic and information structure nuances. Thus, they create LF objects that are not redundant. The consequence of this variable attachment interacts with an independent restriction on modifier stranding in the language to yield different outputs at PF: VP degree modifiers can be stranded whereas AP degree modifiers may not. If the modifier is switched from BIEN to something like *bastante* (= quite), a different set of results follows.

(40) a. Vaciaron bastante las cajas.
They emptied quite the boxes
'They emptied the boxes quite a bit'
[$_{TP}$ vaci-aron ... [$_{VP}$ [bastante] [las cajas] ~~vaci-A-V~~ [$_{AP}$ ~~vaci-A~~]]]

b. #Vaciaron las cajas bastante vacías.
They emptied the boxes quite empty
Intended: 'They emptied the boxes quite empty'
[$_{TP}$ vaci-aron ... [$_{VP}$ [las cajas] ~~vaci-A-V~~ [$_{AP}$ [bastante] vaci-A]]]

The example in (40a) involves the use of *bastante* as a verbal degree modifier. The derivation proceeds in the same fashion as that of (39a). If, on the other hand, *bastante* is merged as an adjectival modifier, the ban on stranding of adjectival degree modifiers forces the A head to be spelled out as in (40b). There is nothing about the grammar of Spanish that would prevent such a structure from being built. The problem is that (40b) has an interpretation identical to (40a), adding no assertive content or pragmatic nuances that are not already present in the latter. The forced multiple copy pronunciation of (40b), created by the ban on stranding adjectival modifiers, thus leads to a preference for using (40a), where the same semantic content is spelled out in a more phonologically economical way.

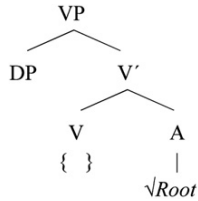
On this particular view, we can capture the fact that BIEN is not the only modifier that can license the VARI construction (see Demonte, 1991), but it is the only one that productively does so because of its special emphatic and colloquial nature as an adjectival modifier that tightly links it with focus. The licensing of the VARI construction depends on a modifier's capacity to attach to AP and add nonredundant pragmatic or information structure content to the entire verbal expression that is not present in ordinary verbal degree modification. There may be some cases in which other degree modifiers such as *muy* (= very) and the comparative *más* (= more) can be used in a way similar to BIEN$_{[+\text{FOC}]}$, adding information to the adjectival subcomponent of a change of state verb that is not identical to the information added when these are used as verbal modifiers. In these cases, the same restriction on the stranding of adjectival degree modifiers will apply, producing a VARI construction. This question is left open for future investigation.

4.4. Consequences for *Break*–Type Verbs

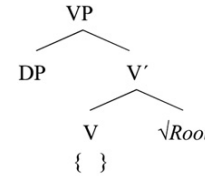
A final point that deserves discussion concerns how *break*-type verbs are to be integrated into the present analysis. Koontz-Garboden (2006) points out that, despite their uniform treatment in the syntax and semantics literature (Baker, 2003; Dowty, 1979; Embick, 2004; Levin & Rappaport Hovav, 1995; Parsons, 1990), the lexical semantic class "change of state" includes verbs in many languages that are patently related to states lexicalized by adjectives in addition to verbs for which the result state entailed is not expressible by an independent adjective, but a participle. In Spanish, *dry*-type and *fatten*-type verbs belong to the former class while *break*-type verbs belong to the latter. In order to account for this division among different types of change of state verbs, Koontz-Garboden (2006) proposes that *dry*-type and *fatten*-type verbs are derived from state-denoting roots while *break*-type verbs are underived event-denoting roots. Applying this idea to the framework that is used here would mean that *break*-type verbs are not inserted as A heads but rather as bare root complements of V. This proposed difference is shown in (41).

(41) DIFFERENCES BETWEEN FORMAL CLASSES OF CHANGE OF STATE VERBS

a. *Dry*-type & *Fatten*-type Verbs



b. *Break*-type Verbs



I believe that Spanish VARI constructions provide evidence for a unified analysis of change of state verbs where all are derived from an underlying adjective as in (41a). Consider the following naturally occurring examples.

(42) a. Tenéis que cerrar el iTunes BIEN$_{[+FOC]}$ cerrado
You all have to close.INF the iTunes really closed
'You guys have to close iTunes good n' closed'
(http://foro.todopocketpc.com/showthread.php?t=199918&page=2)

b. Hago papilla y me sale gran cantidad, pero la
I make purée and there is a lot of it, but it
congelo BIEN$_{[+FOC]}$ congelada ...
I freeze really frozen
'I freeze it good n' frozen' (so it keeps for a longer period)
(http://www.drpez.net/panel/archive/index.php/t-127890.html)

Like the deadjectival *dry*-type and *fatten*-type verbs, *break*-type verbs commonly appear in VARI constructions. If the hypothesis outlined here is on the right track, we would expect this to be explained by the fact that all of these verbs are derived from an adjectival complement that can be modified by BIEN$_{[+FOC]}$. As noted in Section 2, the primary difference they show is that the adjective that forms part of the BIEN$_{[+FOC]}$-A constituent is identical in form to the verb's participle. It is this fact that Koontz-Garboden (2006) has cited in support of the hypothesis that these verbs are not derived from simple states. However, it has been claimed in other work that participial morphology can either mark states derived from events or simple states for some roots (Embick, 2004). There is even evidence that participles that mark states derived from events can become simple states over time. Bosque (1990, 1999) notes that in Old Spanish, many forms that currently denote simple states were used as eventive participles.

(43) fueron las paredes **llenas** de sangre [*General Estoria*] (Bosque, 1990, 1999)
were the walls filled with blood
'the walls were filled with blood'

In Modern Spanish *lleno* can only mean "full" not "filled." States derived from events are expressed by the regular participial *llenado* (= filled). Examples like

(43) are suggestive of a process whereby participial forms may come to denote the simple state associated with the result entailed by the verb with which they share a name. Parsons (1990) hypothesizes that these same forms, once they come to denote simple states, may feed back into word formation processes, coming to be associated with causative and inchoative verbs. Following in this latter vein of research, I conclude that an attractive way to maintain the obvious similarities between *break*-type, *dry*-type, and *fatten*-type verbs in VARI constructions is by adopting the idea that the participles like *roto* (= broken) that realize the adjective in VARI constructions with *break*-type verbs denote simple states. Thus, when these participles appear in VARI constructions, they have a meaning identical to other morphologically simple state-denoting expressions like *seco* (= dry).[6]

5. CONCLUSIONS

This chapter had two objectives. The first was to fill an empirical void in the literature by offering a detailed description of VARI constructions in Spanish. It was shown that these expressions contain an adjective that repeats the verb, overtly expressing a result state that is already entailed through the use of the verb on its own. This overt repetition of a lexical entailment of the verb is contingent on the presence of a degree modifier, BIEN (= really).

The second objective was to argue that VARI constructions provide evidence in favor of syntactically decomposing verbs. It was argued that the cluster of formal and interpretative properties of VARI constructions are best accounted for on the view that all change of state verbs contain a syntactically active adjectival complement. The specifics of the proposal contained the following line of

[6]Two anonymous reviewers ask whether VARI constructions could be used as evidence for a unified treatment of change of state verbs where all of them are derived from an uncategorized root as in (42b), which is the opposite of what I have suggested here. On this view the presence of the adjectival modifier BIEN$_{[+FOC]}$ would merge directly with the $\sqrt{Root}$. The presence of this modifier would then force the root to project as an adjective and be spelled out. The $\sqrt{Root}$ would then move as a head to the higher verbal projections and be spelled out as a verb, creating the reduplicating effect. Both approaches attempt to capture the essence of VARI constructions by claiming that an adjective is pronounced in the complement position of a light verb due to the presence of a modifier and both treat change of state verbs in a uniform way. Thus, I do not believe that recasting this analysis within the root hypothesis of syntactic word formation (Borer, 2005; Marantz, 1997; Levinson, 2010) would significantly alter the intuition behind the analysis based on categories that has been presented here.

The technical differences between the two approaches involve delving into the distinctions between decompositional approaches to words that make use of category labels (Baker, 2001, 2003; Hale & Keyser, 1993, 2002) and the root hypothesis of word formation characteristic of distributed morphology (Arad, 2003; Marantz, 1997; Harley, 2005) and important work by Borer (2005). Exploring the advantages and disadvantages of both approaches as applied to VARI constructions is beyond the scope of this chapter, and I hope the analysis outlined here provides the first step in opening up a discussion along these lines.

reasoning: the degree modifier BIEN may attach to the adjectival subcomponent of change of state verbs and, due to a ban on stranding adjectival degree modifiers, forces the phonetic realization of the A head that is normally deleted as a lower copy of a head movement chain.

The overall conclusion is that VARI constructions may be used to weigh in on important debates regarding how to represent argument structure and verbal meaning in the grammar in addition to questions about the separation of sentential syntax and word formation. In my view, the interpretive and formal properties of VARI constructions follow naturally from the hypothesis that syntactic mechanisms used to represent and predict the nature of sentential phenomena also apply to the internal structure of verbs.

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3

"OBLIQUENESS" AS A COMPONENT OF ARGUMENT STRUCTURE IN AMHARIC

Mark Baker

ABSTRACT

This chapter investigates arguments in Amharic that count as oblique as opposed to direct. These special oblique arguments include the nonagentive subjects of psych verbs but not those of unaccusative verbs, the goal arguments but not the source arguments of ditransitive verbs, and extra "affectee" arguments of unaccusative verbs like "get lost" and "die." The investigation is couched within formal generative grammar ("minimalism"), using data collected from grammars and interviews with native speakers. I show that the differences between oblique and nonoblique arguments with respect to general syntactic processes such as agreement and case marking follow from analyzing oblique arguments as being the complements of a phonologically null adposition. The syntactic peculiarities of these oblique arguments can then be derived from the fact that they cannot satisfy the EPP property of Tense, with the consequence that Tense cannot agree with them. These results are used as a new basis for addressing issues of crosslinguistic variation in the lexicon-syntax

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mapping, as well as theoretical questions about whether verbs have argument structures at all.

Keywords: Amharic, argument structure, psych verbs, ditransitives, null prepositions, agreement

1. GENERAL FRAMING

In this investigation, I take argument structure to be whatever defines the interface between lexical knowledge and syntactic structure. It is the key to answering one or both of the following questions: (i) Given a particular verb, what syntactic structures can that verb appear in? (ii) Given a particular syntactic structure, what lexical items can be inserted into it? Question (i) is expressed in the more traditional "projectionist" idiom, in which syntax is induced so as to satisfy lexical properties (e.g., the Projection Principle of Chomsky, 1981). Question (ii) is expressed in the more fashionable "constructionist" perspective, where syntactic structure arises autonomously, and lexical items are slotted into it rather freely, the felicity of the results depending on how compatible the core meaning of the item is with that of the construction (e.g., Borer, 2005). Either way, not all lexical items are equally compatible with all syntactic structures, and explicating these differences is what I take to be the issue of argument structure in its most general terms.

With this in mind, this chapter explores what needs to be said about argument structure to capture the facts of Amharic, a Semitic language of Ethiopia (Leslau, 1995). I argue that argument structure in Amharic has a less familiar dimension that seems to go beyond simple conceptual necessity. In addition to specifying the number of arguments, types of arguments, and the ordering of those arguments on a thematic hierarchy, Amharic distinguishes between what I call "oblique" arguments and "direct" arguments. Direct and oblique arguments differ syntactically for processes like case assignment, subject agreement, object agreement, and passive. I go on to consider what this notion of obliqueness might amount to in an official syntactic theory. I argue that oblique arguments are those that appear inside a PP headed by a null P, whereas direct arguments are ordinary NPs/DPs. The chapter closes with some speculations about issues concerning Universal Grammar and crosslinguistic variation that are raised by this investigation.

2. BASICS OF AMHARIC ARGUMENT STRUCTURE

To build up to the more distinctive aspects of Amharic argument structure, let us begin with the basics, considering the simplest verb types in this language, and what grammatical phenomena reveal them most clearly.

It will come as no surprise that Amharic has a range of monadic (intransitive), dyadic (transitive), and triadic (ditransitive) verbs, as shown in (1).[1]

(1) a. Almaz mot-ət∫t∫. 'die' <1>
Almaz.F die-3fS
'Almaz died.'

b. Ləmma wi∫∫a-w-in y-ay-al. 'see' <1, 2>
Lemma.M dog-DEF-ACC 3mS-see-AUX.3mS
'Lemma sees the dog.'

c. Ləmma Almaz-in tarik-u-n nəggər-at. 'tell' <1, 2, 3>
Lemma.M Almaz.F-ACC story-DEF-ACC tell-(3mS)-3fO
'Lemma told Almaz the story.'

It would be very rare, if possible at all, for *motə* "die" to appear with three NPs, or for *nəggərə* "tell" to appear with only one NP (putting aside pro-drop). This is a respect in which not all lexical items are equally compatible with all syntactic structures — differences to be indicated for each item, in terms of its basic adicity.

Like other languages, Amharic also has verb roots of variable adicity. For example, it has verbs that vary between taking one argument and two arguments, as in anticausative alternations with verbs like "break" and "open." It also has verbs that vary between taking two arguments and three arguments, like "send," with an optional goal argument. Sometimes the stems used with different adicities are identical; sometimes they have the same roots but different affixes (e.g., middle/passive/anticausative *tə-* on monadic versions, causative *a-* or *as-* on transitive versions, applicative *-bb* or *-ll* on ditransitive versions; see Amberber, 2002). Unfortunately, I do not have the detailed lexical expertise to judge whether optionality and flexibility is the deeper truth about verbs in Amharic or whether rigidity and lexical specification is — a clear bone of contention between projectionists and constructionists.

Another basic issue about argument structure that is relevant to Amharic is which argument is positioned where. For a transitive verb like "kiss," it is not enough to say it appears with two arguments. There is plenty of reason to say

[1]Abbreviations used in glosses include: ACC, accusative; APPL, applicative; AUX, auxiliary; DAT, dative; DEF, definite; F(EM), feminine; FV, final vowel; GER, gerund; IMPF, imperfective; LOC, locative; M(ASC), masculine; NOM, nominative; PASS, passive; PF, perfective; PL, plural; T, tense affix. Agreement markers are glossed with a complex symbol consisting of a number expressing the person of the agreed-with nominal (1, 2, or 3), a lowercase letter expressing the gender/number of the agreed-with nominal (m, f, s, or p), and an uppercase letter expressing the type of agreement (S, O, or P(ossessor)). Nominals referring to females are feminine in Amharic, whereas nominals referring to males or inanimate objects like 'book' are almost always masculine. For details of the gender system of Amharic, see Kramer (2009). In glosses of Bantu languages, Arabic numerals refer to noun classes (genders).

that one of the arguments — the agent/causer — always starts out higher in the structure than the other argument — the patient/theme. This can be seen for an example like (2) in several ways.[2]

(2) Səw-ɨyyəw Aster-ɨn sam-at/ sam-ə.
man-DEF Aster.F-ACC kiss.PF-(3mS)-3fO/ kiss.PF-3mS
'The man kissed Aster.'

First, subject/agent–object/patient–verb order is normal in this fairly uniform head-final language. (Object–subject–verb order is also possible under some conditions, but this clearly involves topicalization of the object, or other discourse-driven movement.) Second, if the object-theme is a DP, it must be marked with the accusative suffix *-n*[3]; the subject–agent cannot be so marked. This is arguably a very direct reflection of the relative heights of the two arguments, since Baker (2012) argues for (3) as the rule of accusative case assignment in Amharic, following Marantz's (1991) notion of dependent case assignment, as developed by Baker and Vinokurova (2010).

(3) If there are two distinct argumental nominals X and Y in the same clause such that X c-commands Y, then value the case feature of Y as accusative unless X has already been marked for case.

Third, the subject–agent triggers what we might call "Type 1" agreement on the verb. This sort of agreement is required on all finite verbs, it is absent on verbal nouns, and its form varies significantly with the tense-aspect of the clause: it shows up as a suffix in perfective clauses but as a prefix in imperfective ones (Kramer, 2010, p. 4).

(4) səbbər-ku ɨ-səbr
break.PF-1sS 1sS-break.IMPF
səbbər-ɨh tɨ-səbr
break.PF-2mS 2mS-break.IMPF
səbbər-ə yɨ-səbr
break.PF-3mS 3mS-break.IMPF

This is plausibly agreement on a high functional head Tense (or Aspect; the exact label is not significant). For example, (5) shows that if the agent refers to

[2]Third singular masculine perfective subject agreement, normally realized as /ə/, deletes in front of a vowel-initial suffix, such as the feminine singular object agreement/at/. This is merely a special case of a regular phonological change that helps to resolve vowel hiatus. When a 3mS suffix is present underlyingly but not seen on the surface for this reason, I put parentheses around it in the gloss, as in (2).

[3]Indefinite noun phrases, in contrast, are not marked for accusative case in Amharic. I take these to be NPs, not DPs, and assume that accusative is only spelled out overtly as *−n* on the category D in Amharic (see Baker (2012), and references cited there).

a female, the obligatory Type 1 agreement morpheme changes accordingly relative to example (2).

(5) **Almaz** Aster-in sam-**ətʃʧ-**(at). (compare (2))
Almaz.F Aster.F-ACC kiss.PF.3fS-3fO
'Almaz kissed Aster.'

A fourth grammatical difference that reflects the position of arguments in the clause concerns a second form of agreement, "Type 2" (object) agreement. This sort of agreement is often optional, as shown in (2) and (5). It follows Type 1 agreement in perfective clauses, and does not vary with tense/aspect in form or position. The object-theme of a transitive verb can trigger this sort of agreement, but the subject–agent cannot:

(6) Səw-ɨyyəw **Lemma-n** sam-ə-**w.** (compare (2), (5))
man-DEF Lemma.M-ACC kiss.PF-3mS-3mO
'The man kissed Lemma.'

A fifth indication of a difference in relative position comes from bound variable anaphora, a classic c-command test. (7a) shows that if the agent-subject is a quantified expression, a pronominal possessor inside the object can be interpreted as a variable bound by it. (7b) shows that the converse is not true: if the object-theme is a quantified expression, a pronominal possessor inside the subject cannot be interpreted as a variable bound by it. (7c) shows that this remains true even if the object-theme precedes the subject, in marked OSV order. Hence, the difference is not attributable simply to precedence in the surface string. (7d) is a minimal comparison with (7c): here the patient is fronted past the agent by passive (A-movement), rather than by scrambling (A-bar movement), and the theme can bind into the agent.

(7) a. Hullu səw lɨʤ-u-n yɨ-wədd-all.
all person child-3mP-ACC 3mS-love.IMPF-AUX.3mS
'Everybody loves his (own) child.' (bound reading OK)

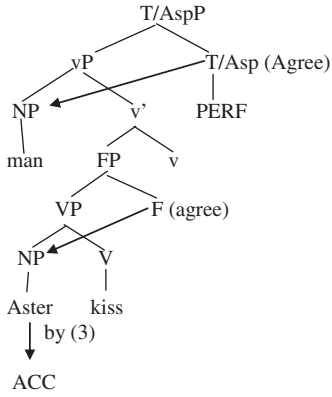
b. Abbat-u hullu-n səw yɨ-wədd-all.
father-3mP all-ACC person 3mS-love.IMPF-AUX.3mS
'His father loves everyone.' (one person's father, bound reading impossible)

c. Hullu-n səw abbat-u yɨ-wədd-all.
all-ACC person father-3mP 3mS-love.IMPF-AUX.3mS
'His father loves everyone.' (one person's father, bound reading impossible)

d. Hullu səw b-abbat-u tə-wədd-o nəbbər.
all person by-father-3mP PASS-love-GER.3mS AUX
'Everyone was loved by his (own) father.' (bound reading OK)

These five differences between the agent-subject and the theme-object are explained in familiar ways if we say that the agent asymmetrically c-commands the theme in the core syntactic structure of Amharic, as shown in (8).

(8)



Given that specifiers are initial in Amharic (and perhaps in all languages), the agent being higher than the object translates into the agent preceding the object in normal word order. The agent being higher also means that, if it is present, a high functional head like T/Asp will encounter it before the theme when it probes downward for something to agree with (Chomsky, 2000). Type 2 agreement is hosted by a lower functional head, called F in (8). This agrees with the object, not the subject, because the object is lower than F, whereas the subject is higher.[4] The subject A-binds the object and everything in it, satisfying the condition on bound variable anaphora. Finally, the agent c-commanding the theme means that accusative case is assigned to the theme but not the agent by the rule of dependent case assignment in (3).

[4]See Baker (2012) for why I do not necessarily identify F with transitive v in Amharic. In that work, I also explain why I take Type 2 morphemes to be the result of Agree between a functional head and a DP, not cliticized pronouns of (more or less) the sort found in Romance, as Kramer (2010) argues. My reasons in brief are these: (i) The Agree theory can explain why only one Type 2 morpheme can appear on a verb even in ditransitive constructions in Amharic, whereas more than one pronominal clitic can appear on the verb in Romance. (ii) The Agree theory can explain why a Type 2 morpheme is possible only with the goal and not with the theme in ditransitive constructions (see (9) vs. (12), (15)), whereas an accusative pronoun can cliticize to the verb without a dative one doing so in Romance. (iii) Although type 2 affixes seem optional with theme objects and are related to the definiteness of those objects, these affixes are obligatory with psych subjects and applied objects of certain kinds, regardless of their definiteness (see, e.g., (22)). In these environments, Type 2 morphemes are seen to be obligatory and semantically inert, as one expects agreement to be. I then suggest that type 2 agreement is obligatory even with themes if and only if they have undergone object shift out of VP, to get close enough to F for Agree to apply.

That being said, there may be attractions to a combined approach that says that both Agree and cliticization are involved in the grammar of Type 2 morphemes in Amharic. Kramer (2010) does this by saying that Type 2 morphemes are cliticized D heads, but a D can only cliticize to v in Amharic if v Agrees with DP. Conversely, I have contemplated a view in which F agrees with DP in Amharic, but then F combines with the verb by cliticizing to it (at PF) rather than by (say) head movement. As far as I can tell, the differences between these various technical possibilities have little impact on the points I make below.

This discussion establishes that the familiar — arguably universal — association between thematic roles and syntactic structure holds in Amharic. It also gives us a baseline for the grammatical processes that can be used to reveal other structural differences, hence other argument structure differences, in this language.

3. HIERARCHY IN TRIADIC VERBS

Crucially for this inquiry, these same phenomena can be used to establish the relative hierarchy among the three arguments of triadic verbs like "tell" in (9) and "rob" in (10).

(9) Ləmma Almaz-ɨn tarik-u-n nəggər-at. (= (1c))
Lemma.M Almaz.F-ACC story-DEF-ACC tell-(3mS)-3fO
'Lemma told Almaz the story.'

(10) Ləmma Aster-ɨn gənzəb-u-n sərrək'-at.
Lemma.M Aster.F-ACC money-DEF-ACC rob-(3mS)-3fO
'Lemma robbed Aster of the money.'

First, the very same considerations show that the agent is the highest argument of the three, generated above both the theme and the goal ((9)) or source ((10)). This argument is the first in canonical word order; it cannot be accusative, whereas the other arguments must be[5]; it must trigger Type 1 aspect-sensitive agreement; it cannot trigger Type 2 invariant agreement. (Presumably a quantified agent can also bind a pronoun inside either the goal or the theme, but I have not investigated this closely.)

Some of these tests also show that the goal/source/affectee argument c-commands the theme argument, but not vice versa. Case assignment and aspect-sensitive agreement are not able to make any distinctions here. But there is a difference in word order: affectee-theme order is normal, and theme-affectee order is marked at best, especially when both are accusative:[6]

(11) a. Ləmma Aster-ɨn məs'haf-u-n asayy-at.
Lemma.M Aster.F-ACC book-DEF-ACC show.PF-(3mS)-3fO
'Lemma showed Aster the book.'

b. ??Ləmma məs'haf-u-n Aster-ɨn asayy-at.
Lemma.M book-DEF-ACC Aster.F-ACC show.PF-(3mS)-3fO
'Lemma showed Aster the book.'

Furthermore, the goal/source/affectee can trigger Type 2 (object) agreement, as shown in (9) and (10). It is impossible for the theme to trigger this sort of

[5]The goal in (9) can also be dative rather than accusative; see (27) below.

[6]When the goal is in dative case, then theme-goal-verb order is tolerated more easily, perhaps because the dative argument can then be analyzed as a PP rather than an NP; see also note 7 and Baker (2012).

agreement when an affectee is present, as shown in (12) and (13) — although it is normal for the theme to trigger this agreement when there is no third argument (see (6), also Baker(2012)).[7]

(12) *Ləmma Almaz-in tarik-u-n nəggər-ə-w.
Lemma.M Almaz.F-ACC story.M-DEF-ACC tell-3mS-3mO
'Lemma told Almaz the story.'

(13) *Ləmma Aster-in gənzəb-u-n sərrək'-ə-w.
Lemma.M Aster.F-ACC money.M-DEF-ACC rob-3mS-3mO
'Lemma robbed Aster of the money.'

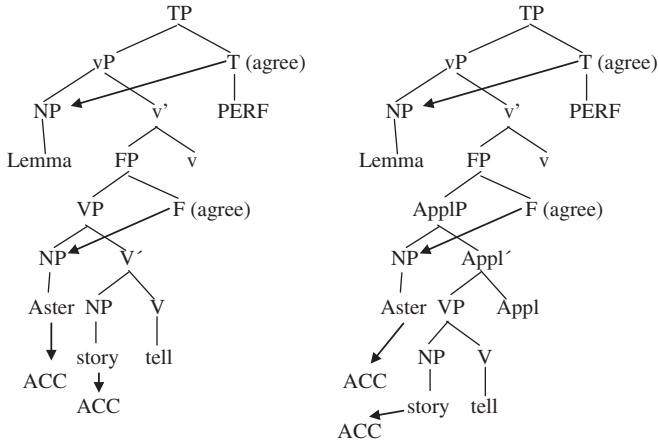
My limited data on bound variable anaphora is consistent with this. In (14) the quantified NP is only understood as the goal, not the theme (as expected, given (11)). And, to the extent that the example is felicitous, it is possible to interpret the pronoun inside the second object as a variable bound by the first object.

(14) (?)Aster hullu-n səw abbat-u-n assayy-əʧʧ.
Aster.F all-ACC person father-3mP-ACC show-3fS
'Aster showed everyone his own father.'

When interpreted in the light of (7), this supports saying that the goal A-binds the theme in a structure with no scrambling.

These three considerations then converge on a structure in which the goal or source asymmetrically c-commands the theme, much as the agent asymmetrically c-commands both the goal/source and the theme. This is shown in the structures in (15).

(15) Structure: or: (= (9a))



[7]Sometimes the goal or source argument is projected as an explicit PP with overt P head. When this occurs, object agreement with the theme is possible, the PP not intervening (Baker, 2012). Some goals in dative case may marginally be analyzed as PPs in this sense, but goals in accusative case never are.

These structures directly capture the word order in (11) and the bound variable anaphora possibility in (14). F agrees with the goal or source rather than the theme when both are present, because that is the first NP it finds probing downward, just as T/Asp agrees with the agent rather than the theme when both are present (see (8)). I leave open whether the goal/source/affectee is in Spec of VP (Larson, 1988), or whether it is generated as the Spec of a higher functional head Appl (Pylkkänen, 2008); either assumption gets the crucial fact that it is lower than the agent but higher than the theme. That this is equally true for both the goal argument of "show," "give," or "tell" and the source argument of "rob" is important for this inquiry, putting in context the difference to be discussed next.

4. ANOTHER FACTOR IN AMHARIC ARGUMENT STRUCTURE: "OBLIQUENESS"

So far Amharic looks quite ordinary in these respects. At most, Amharic verbs list the number and semantic type of their arguments; the position of those arguments is then determined by their semantic type according to universal principles (the Thematic Hierarchy, the UTAH).[8] Now we are ready to recognize the extra factor in Amharic argument structure that distinguishes verbs in a seemingly language-specific way.

4.1. Two Kinds of Triadic Verbs

First, a significant difference shows up between triadic verbs with a source argument like "rob" and triadic verbs with a goal argument like "tell" when the verbs are passivized. No difference was evident in the active versions, seen in (9) and (10). But the passive versions are quite different. In the passive of "tell" or "give," the theme argument must be nominative and may trigger subject agreement on the verb. The goal argument may optionally be marked accusative, and it must trigger object agreement on the verb:

(16) a. **Almaz-(ɨn)** tarik-u-(*n) tə-nəgr-ow-**at** nəbbər.
Almaz.F-ACC story-DEF-(*ACC) PASS-tell-3mS.GER-3fO AUX
'Almaz was told the story.'

b. **Almaz-(ʔɨn)** məs'haf-(u)-(*n) tə-sət't'-**at**.
Almaz.F-ACC book-DEF-(*ACC) PASS-give-(3mS)-3fO
'Almaz was given a (the) book.'

In contrast, in the passive of "rob," the theme argument must be accusative and cannot trigger any kind of agreement on the verb. The source

[8]Pending here is the question of whether themes and agents are in different positions even with one argument verbs — the status of the Unaccusative Hypothesis in Amharic. This is taken up briefly below.

argument can only be nominative, and must trigger subject agreement on the verb:

(17) **Aster** ʃant'a-wa-n tə-sərrək'-əʧʧ-(*əw). (*Aster-in)
Aster.F suitcase-3fP-ACC PASS-rob-3fS-(*3mO) Aster-ACC
'Aster was robbed of her suitcase.'

Example (18) shows that it is bad to have the goal trigger subject agreement and the theme bear accusative case in the passive of "give."

(18) ʔ*Almaz məs'haf-u-n tə-sət't'-əʧʧ.
Almaz.F book-DEF-ACC PASS-give-3fS
'Almaz was given the book.'

Conversely, (19) shows that it is bad to have the theme trigger subject agreement and the source bear accusative case in the passive of "rob."

(19) *Gənzəb-u Aster-in tə-sərrək'-ə. (OK with *kə'aster*)
money-DEF Aster-ACC PASS-rob-3mS from-Aster
'The money was stolen from Aster.'

Like *sərrək'ə* "rob" in this respect are the verbs "to lose x on y," "to strip x of y" (e.g., an officer of his rank), "to hit x on y," and another verb *zərrəfə*, also translated as "rob" or "steal" (Leslau 1995, p. 147, sec. 41.17); all of these verbs arguably have source arguments. Like "give" and "tell" are applicative verbs in Amharic, formed from transitive verb stems by adding the suffixes *-ll* (goal/benefactive) or *-bb* (malefactive).

Given the results of the previous section, we cannot attribute this to a difference in the position of the source and goal arguments relative to the theme. Nevertheless, sources act like the subjects of passives, and goals cannot. We thus need some other distinction. At a minimum, we would need a new label: we could say that instead of both having the argument structure <Agent, Affectee, Theme>, "rob" has the argument structure <Agent, Source, Theme> and "give" has <Agent, Goal, Theme>. But we would still need to make principles of case and agreement sensitive to this label, ideally for principled reasons. Alternatively — closer to my official proposal — we could say that some arguments are marked as being oblique: "give" has the argument structure <Agent, Goal/Affectee*, Theme> and "rob" has <Agent, Source/Affectee, Theme>, where a starred role is oblique and somehow resists being associated with subject agreement.

4.2. Dyadic Verbs with Oblique Arguments

This oblique–direct distinction can be found with other kinds of verbs as well. Amharic has a second kind of dyadic verb, contrasting with simple <Agent, Theme> verbs like *samə* "kiss," discussed above. Some verbs that one would expect

to be unaccusative verbs (<Theme>) have dyadic as well as monadic versions; these include "die," "get lost," and "exist" (Amberber, 2002, p. 60, 2005)[9]:

(20) a. Almaz(-in) zəməd mot-at. (*mot-ətʃtʃ)
Almaz.F-(ACC) relative die-(3mS)-3fO die-3fS
'Almaz had a relative die on her.'

b. Ləmma sejt lidʒ-u t'əffa-tʃtʃ-əw (or (?)Lemma-n)
Lemma.M female child-DEF lose-3fS-3mO Lemma-ACC
'Lemma lost his daughter.'

c. Sost lidʒ-otʧʧ all-u-ɲɲ.
three child-PL exist-3pS-1sO
'I have three children.'

Terminologically, let us say that these have the argument structure <Affectee, Theme>. They differ from simple <Agent, Theme> verbs in several respects. The affectee argument is not like the agent argument of a normal transitive verb in that it triggers object agreement, not subject agreement, and in that it (optionally) bears accusative case. At the same time, it is not like the theme argument of a normal transitive verb in that object agreement with it is obligatory (not optional), and accusative case is optional (not obligatory). Furthermore, the affectee argument seems to be generated higher than the theme, because it comes before the theme in the most common word order, and because when quantified it can bind a pronoun inside the theme, as shown in (21) (contrast (7c)).

(21) Hullu səw lidʒ-u t'əff-a-w.
all person child-3mP lose-3mS-3mO
'Everybody lost his own child.'

The affectee thus asymmetrically c-commands the theme for these dyadic verbs by the same three tests that show that the source or goal argument of a ditransitive verb c-commands the theme: word order, object agreement, and bound variable anaphora. But the affectee is different from an agent in that it cannot trigger subject agreement, and can bear accusative case. These are the same properties that the affectee arguments of "give" and "tell" have in passives, as shown above. I conclude that the affectee arguments of these dyadic verbs are also oblique: the verbs are <Affectee*, Theme>, not just <Affectee, Theme>. Note that it is not particularly surprising that unaccusative verbs with an extra

[9]One might wonder if the predicates in (20) are really monadic ones, with what I say is the affectee argument of the verb really being the possessor of the theme argument (I thank an anonymous reviewer for raising this possibility). If so, then the best glosses for the examples in (20) would be "Almaz's relative died," "Lemma's daughter got lost," and "My three children exist." We know, however, that this is not the case, because DP-internal possessors in Amharic are marked with the "genitive" particle *yə* (e.g., *yə-Ləmma bet* "Lemma's house"), and that particle is absent in (20a,b).

argument behave like passives with an extra argument. This is a special case of the general fact that unaccusative verbs behave like passive verbs in many respects in many languages. Also having the same syntactic behavior are applicatives derived from unaccusative roots by suffixing *-ll* or *-bb* (e.g., "to be born for").

4.3. Impersonal Monadic Verbs

The obliqueness distinction is relevant even to seemingly monadic verbs in Amharic. Some monadic verbs stand out as having object agreement, not subject agreement, with their sole argument. The following are some examples:

(22) a. **Aster ʧ'ənnək'-at.** (Amberber 2002, p. 20; also OK: *Aster-in*)
Aster.F worry-(3mS)-3fO
'Aster is worried.'

b. Rab-ə-ɲɲ. (Leslau 1995, p. 435)
hunger.PF-3mS-1sO
'I am hungry.'

c. Almaz ammәm-at (Also OK*: Almaz-in*)
Almaz.F hurt-(3mS)-3fO
'Almaz is sick, Almaz hurts.'

Notice also that the single argument of these verbs can optionally be marked as accusative.[10] These verbs are different from both canonical unaccusative verbs like "die" ((1a)) and "get lost" ((23a)) and unergative verbs like "sing" ((23b)), whose sole arguments cannot be accusative and trigger subject agreement, not object agreement:

(23) a. Lemma t'əff-a. (*t'əff-a-w)
Lemma.M get.lost-3mS get.lost-3mS-3mO
'Lemma got lost.'

b. Aster zəffən-əʧʧ.
Aster.F sing-3fS
'Aster sang.'

We may thus say that the sole arguments in (22) are neither agents nor themes, but experiencers (affectees). Furthermore, their grammatical properties are similar to those of the affectees of triadic "give" or dyadic "lose": they resist subject agreement, require object agreement, and tolerate accusative case. The

[10]Just what conditions this option (if anything) is not clear. Amberber (2002, 2005) says that the argument can be nominative or accusative in most cases, without further remark. The accusative option is attested but not very common in Leslau (1995), and it is accepted but rarely offered and sometimes actively dispreferred by my consultant. See below for some theoretical discussion.

arguments of these verbs are thus oblique in the sense I have been describing; their argument structure is <Affectee*>, not just <Affectee>. Leslau (1995) calls them impersonal verbs, because subject agreement is default third person masculine agreement (sometimes deleted phonologically; see note 2), just like ordinary impersonal verbs such as *yi-mok'k'-all* "it is hot."

Summarizing, we have seen that some arguments in Amharic can be designated as oblique. Oblique arguments include the middle arguments of some ditransitive verbs ("give," "tell") but not others ("rob"), the higher argument of dyadic unaccusative verbs, and the sole argument of some monadic verbs (psych verbs). It is a general feature of argument structure in Amharic, present on verbs of all adicities, and not reducible to position relative to other arguments.[11] This is a potential barrier to reductionistic approaches to argument structure, and it calls for a deeper theoretical analysis.

5. "OBLIQUE" ARGUMENTS AS NPs GOVERNED BY A NULL P

So what is obliqueness really, from a theoretical perspective? It may help to expand the list of possible theta-roles to include more fine-grained options: experiencers and sources as opposed to agents, themes, and goals. But that is not sufficient by itself; one still needs to say how and why the morphosyntax is sensitive to these labels. A striking fact about oblique arguments in Amharic is that they are expressed using the same case, agreement, and word order resources as other arguments are. In some languages, it might be enough to say that experiencer-goal arguments take a special case, say dative, which distinguishes them from other arguments. But that is not true in Amharic. Here oblique arguments are signaled by normal object agreement and normal case marking being used in different combinations — for example, an argument with nominative case that triggers object agreement. Hence, we should hope to extend the normal rules of agreement and case assignment in Amharic to these new arguments in some fairly principled way.

[11]Given this classification, we might predict that another type of dyadic verb could be possible in Amharic, one in which the *lower* of the two arguments is oblique. Such verbs would have the argument structure <Agent, Affectee*>, in contrast to both <Agent, Theme> and <Affectee*, Theme>. Given the tests we have in hand, such a verb would only be detected in transitivity alternations. The transitive version would look like an ordinary agent-theme verb, but the intransitive version would look like an impersonal verb, not like an unaccusative verb. A possible case is "hurt," for which the transitive version in (i) is attested, along with the impersonal version (showing object agreement with the sole argument) in (22c).

(i) Siga y-ammə-ɲɲ-all. (Leslau 1995, p. 437)
meat 3mS-sicken-1sO-AUX.3mS
'The meat makes me sick.'

5.1. Motivating the Core Proposal

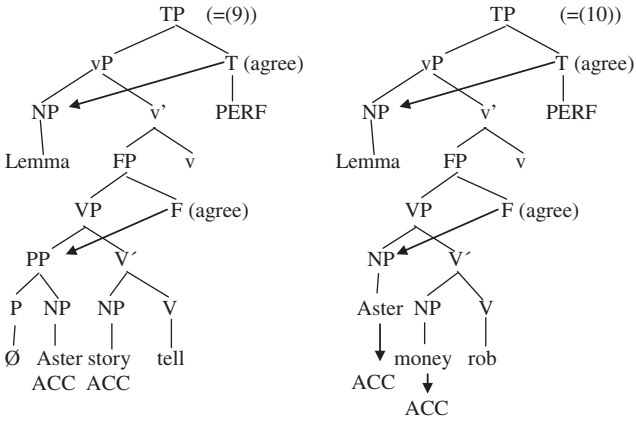
My proposal is that an oblique argument is one that is expressed in the syntax as a PP headed by a null P, rather than as an NP. For monadic verbs, this would give the difference between an experiencer verb and an unaccusative verb shown in (24).[12]

(24) a. [$_{TP}$ [$_{VP}$ [$_{PP}$ Ø$_{P}$ Almaz] be.sick] T] (= (22c))

b. [$_{TP}$ [$_{VP}$ [$_{NP}$ Almaz] die] T] (= (1a))

For triadic verbs, it would give the representational difference in (25).[13]

(25)



Examples with dyadic unaccusative verbs like "lose" and "die" ((20a,b)) would also have a structure like (25a), except that there would be no agent in Spec,vP. I tentatively assume that this null P means something, helping to justify its existence in the structure in minimalist terms. However, its meaning is rather general and abstract — something like "goal" or "affectee" — and largely or completely redundant with the meaning of the verb. This may help account for it being phonologically null, along the lines of Emonds's (1987) "Invisible Category Principle." See Section 6 for more discussion.

This proposal seems crosslinguistically plausible in that oblique arguments in Amharic are reminiscent of quirky dative case arguments in (e.g.) Icelandic in

[12]I show the null P as a preposition in my diagrams, for convenience and familiarity, but it is possible that it should really be a postposition, depending on one's analysis of Amharic's head-finality.

[13]I continue to leave open whether the PP or NP is in SpecVP or in SpecApplP, which is an independent distinction. (But see Section 6.2 for a conjecture about null headed PPs being licensed only in SpecApplP.)

several ways. Both are the subjects of psych verbs and goals of triadic verbs or dyadic nonactive verbs, for example:

(26) a. Mér kólnar. (Icelandic)
Me.DAT get.cold.3sS
'I'm getting cold.'

b. Ég sýndi henni bílana.
I.NOM showed her.DAT the.cars.ACC
'I showed her the cars.'

c. Henni voru sýndir bílarnir.
her.DAT were shown the.cars.NOM
'She was shown the cars.'

Probably this is not a coincidence. Note also that quirky dative NPs resist subject agreement in Icelandic ((26a,c)). That is a key feature of oblique arguments in Amharic too — arguably the one that drives their other peculiarities.

Even within Amharic, one can see a partial relationship between obliqueness and dative case. The middle argument of "give" and "tell" can be marked with dative case (*lə*), but the middle argument of "rob" cannot be:

(27) Ləmma l-Almaz tarik-u-n nəggər-at.
Lemma.M DAT-Almaz.F story-DEF-ACC tell-(3mS)-3fO
'Lemma told Almaz the story.'

(28) *Ləmma l-Almaz gənzəb-wa-n sərrək'-at.
Lemma.M DAT-Almaz.F money-3fP-ACC rob-(3mS)-3fO
'Lemma robbed Aster of her money.'

The option of dative case correlates with the fact that the middle argument of "give" acts like it is oblique (even when it is not dative), but the middle argument of "rob" does not.

However, we cannot simply say that obliqueness is phonologically null dative case in Amharic, for several reasons. First, Amharic has overt dative case as well, as seen in (27).[14] Second, some oblique arguments can never appear with overt dative, including the experiencer subjects of "hunger," "be sick," etc. Third, oblique arguments in Amharic are *not* resistant to object agreement, even though they resist subject agreement. That seems different from Icelandic, where dative arguments resist agreement with all primary predicates (although Icelandic has no object agreement to compare with directly).

We want then some kind of connection between obliqueness in Amharic and quirky dative in Icelandic, but it needs to be somewhat indirect. This leads to

[14]We know that *lə* is a case marker in (27), not a P, because it does not block object agreement with the goal. Moreover, the goal in this construction still blocks object agreement with theme; see Baker (2012).

my proposal that oblique arguments are PPs with null heads. This null P could assign dative case in Icelandic (McFadden, 2004), but have different effects in syntax of Amharic.

5.2. Developing the Core Proposal

To develop the syntactic consequences of this, let us zero in on a key theoretical question: *Why would a nominal be eligible for Agree with F but not with T?* The plausible reasons are few, assuming that both fall under the same theory of Agree (see note 4 above and Baker (2012) for defense of this assumption).

I suggest that the crucial independent difference between T and F is that T is associated with an EPP feature, whereas F is not. We can see this rather clearly in English, for example. The NP that T agrees with is also drawn up to the SpecTP position, but the NP that F agrees with (the object, abstractly) is not drawn up into SpecFP. So an underlying structure like (29a) comes out as (29b), but not as (29c) (Chomsky, 1993).

(29) a. [$_{TP}$ will [$_{vP}$ Mary v [$_{FP}$ **F** [$_{VP}$ see **John**]]]] →

b. [$_{TP}$ Mary will [$_{vP}$ – v [$_{FP}$ **F** [$_{VP}$ see **John**]]]] *not*

c. *[$_{TP}$ Mary will [$_{vP}$ – v [$_{FP}$ **John F** [$_{VP}$ – see]]]

Let us assume that the same asymmetry holds in Amharic, although it is less obvious from word order, because Amharic is a Spec-Complement-Head language, so movement to a higher Spec position is likely to be string-vacuous.[15]

We can connect this rather familiar difference between T and F to the PP/NP distinction in Amharic with the following auxiliary assumptions:

(30) a. A null-headed PP cannot satisfy the EPP feature of a head.

b. XP cannot satisfy the EPP feature of T if T agrees with YP distinct from XP.

c. The NP/DP complement of $Ø_P$ cannot (A-)move out of the PP.

Assumption (30a) is a special case of something that Landau (2007) claims to hold with considerable generality: that no XP with null head X can satisfy the

[15]Note that this distinction between T and F need not be universal. Perhaps there are VSO languages that lack an EPP feature on T (cf. McCloskey, 1996), and S-Infl-O-V-PP/CP languages like Bambarra that have an EPP feature on F (cf. Koopman, 1992). Such languages might exist, and the implications for oblique arguments in those languages would need to be investigated. But both kinds of language are relatively rare compared to garden variety S-Infl-V-O-PP/CP languages.

Why T should have an EPP feature more often than F is an interesting conceptual question that I won't speculate on here, beyond conjecturing that it has to do with T being the highest functional head in the clause (cf. Baker & Willie, 2010).

EPP feature of another head Y.[16] The case at hand is simply this with XP = PP and Y = T/Asp. Therefore, an oblique argument cannot move to SpecTP in Amharic. Next I assume (30b), that the agreement property of T and its EPP property are linked such that it is impossible for one phrase to be agreed with and a different one to satisfy T's EPP feature. (30b) is a parameterized property, not a universal one; it does not hold in English and Icelandic, for example. (For Icelandic, this is seen in (26c), where the dative argument satisfies the EPP feature of T, but T agrees with the theme still inside VP.) But (30b) has been said to hold in Bantu languages by Baker (2003) and Carstens (2005), to explain (among other things) why the Bantu verb must agree with the fronted locative in cases of locative inversion ((31)), not with the postverbal theme, as is possible in English.

(31) Oko-mesa kw-a-hir-aw-a ehilanga. (Kinande)
LOC.17-table 17S-T-put-PASS-FV peanuts.19
'On the table were put peanuts.' (**hy-a-hir-aw-a* '19S-T-put-PASS-FV')

Taken together, (30a) and (30b) imply that T cannot agree with an oblique argument in Amharic, or it will be doomed to violate its EPP property. In contrast, F does not have an EPP property to worry about. Therefore, it is freer to agree with an oblique argument, this being allowed by the laws of agreement per se.[17] This is at the heart of my account of the differences between oblique arguments and direct ones.

[16]Landau derives this from his PF-oriented version of the EPP, which makes sense in that the nullness of P is presumably a PF property. But I assume that the details of how the EPP is stated are not crucial here.

An alternative (noticed also by an anonymous reviewer) would be to replace (30a) with a statement that PPs in general cannot satisfy the EPP property of T in Amharic, whether null headed or not — perhaps because T seeks a D feature (Chomsky, 1995). That version would presumably be parametrized, not universal, given the existence of locative inversion in English and other languages (e.g., (31)). Whether there is locative inversion in Amharic is unclear to me: word orders like "In-market many people be" are attested (Leslau, 1995, p. 528), but it is not easy to tell if the locative is in SpecTP or not.

[17]To permit object agreement with oblique arguments, it is also necessary to say that this kind of null P does not count as a phase head. It also appears not to assign its own case, given that (3) can apply to mark the oblique argument as accusative, as long as other conditions are met. In this way, my proposal is different from Rezac's (2008) otherwise rather similar use of null Ps. Rezac assumes that null headed PPs are always phases, and this should block subject agreement and object agreement equally.

Baker and Kramer (in press) argue for a different kind of null P in Amharic: one more like Rezac's, which does assign oblique case to its complement. This results in what have traditionally been called prepositional phrases in an otherwise head-final language. Those null Ps differ from the one posited here in a cluster of ways: they have meanings not largely redundant with that of the verb ("from," "toward," "with," etc.), they block F (as well as T) from agreeing with their object, they block the assignment of accusative case to their complements by (3), and they assign oblique case to their complements. More thorough comparison of these two quite different kinds of null P should be theoretically revealing.

Finally, (30c) closes a loophole in the account. Without it, T could agree with the NP inside the null PP, and the NP itself could satisfy the EPP without carrying the PP along with it. (30c) is presumably related to the fact that overt Ps cannot be stranded by NP movement in pseudopassives in most languages (English being an exception). It may, however, be a point of variation; see Section 6.3 for some discussion.

5.3. Applying the Core Proposal: Impersonal Verbs

With these assumptions in place, we can consider some derivations to see how the syntax of direct versus oblique arguments follows from this. First, as a baseline, consider a simple unaccusative clause. The sole argument is a direct one, NP or DP not PP. Hence T can agree with it, and must to satisfy its EPP property (assuming that inserting an expletive pro would be a last resort). The theme argument then moves to Spec, TP. Since there is no higher argument — indeed no other argument at all — the accusative case rule in (3) does not apply, and the argument shows up as nominative:

(32) $[_{TP}\ [_{NP}$ Almaz] [[$[_{VP}\ [_{NP}$ ~~Almaz~~] die] F] (v)] T] (=(1a))

mov't Agree

One possible complication is whether agreeing F is also present in this structure. The standard assumption is that it is not, because F is no other than agentive v. But Amharic is different from many other languages in that object agreement is possible on nonagentive verbs whenever that verb has a goal/affectee argument as well as a theme, as we have seen in examples like (16) and (20). This led Baker (2012) to claim that F is distinct from transitive v in Amharic. If so, then it could be present in (32) as well. Let us assume then that it is, and it does agree with the argument *Almaz* in syntax. However, this does not prevent T from also agreeing with *Almaz* (given that my (2008) Case Dependency of Agreement parameter set "no" in Amharic; see Baker (2012)), and it must in order to satisfy its EPP feature. I then assume that the presence of T agreement with an NP suppresses the morphological expression of F agreement with that same NP, by "Kinyalolo's Constraint" (Carstens, 2005, p. 253; Kinyalolo, 1991), which I take to hold at PF:

(33) Kinyalolo's Constraint: in an adjoined structure [i.e., within a single morphological word — MCB], AGR on a lower head is inert if and only if its features are predictable from AGR on a higher head.

This constraint seems to be parameterized, holding for example in the Bantu languages but not in Burushaski on the analysis of Baker (2008, p. 215), where the sole argument of an unaccusative verb does visibly trigger both object agreement and subject agreement on the verb (original data from Willson, 1996). The analysis in (32) says that the syntax of Amharic is just like that of

Burushaski in this respect, except that the object agreement on F is "inert" (suppressed at PF) by (33) in Amharic.[18]

Compare this derivation with that of a monadic experiencer verb like (22c), whose argument is oblique. This will have the representation in (34), different from (32) in that the argument is contained in a null-headed PP. F is definitely present, and agrees with the NP in PP, this being the closest goal. T/Asp is present as well, but it cannot agree with *Almaz*, or its EPP feature will be violated: PP cannot satisfy it by (30a), NP cannot by (30c), and nothing else can if T agrees with NP by (30b) (concerns that do not apply to F). Therefore T does not agree with *Almaz*, and the agreement of F with NP is not suppressed by (33). We may assume that an expletive pro is inserted in SpecTP as a last resort to satisfy T's EPP property, T showing masculine singular (default) agreement with this expletive. Finally, the NP *Almaz* is not c-commanded by any other argument (but at most by an expletive), so (3) does not mark it as accusative. We thus derive that this argument has nominative case but triggers object agreement, a combination of properties not found with direct arguments (themes) of transitive or unaccusative verbs.

(34) $[_{TP}$ *pro*(3m) $[[\ [_{VP}\ [_{PP}\ \emptyset_P$ Almaz] be.sick] F] (v)] T] (=(22c))

On the less common alternative in which *Almaz* is marked accusative, see below.

5.4. Special Issues with Dyadic Constructions

Somewhat more complex are structures that contain both an oblique goal/experiencer argument and a distinct theme argument — those with either a

[18]Ruth Kramer (personal communication) points out a possible problem for Kinyalolo's Constraint in Amharic: there do seem to be two agreements with the subject on the same verb in a so-called compound imperfective form, a prefix and a suffix (compare (4)). An example is (i).

(i) ti-səbr-all-əʧʧ (Leslau 1995, p. 342)
3fS(IMPF)-break.IMPF-AUX-3fS(PF)
'She breaks it, she will break it.'

However, I assume that there are really two distinct morphological words here, one built around the main verb *səbr* "break" and the other around the auxiliary *allə* "be, exist, have" (also usable as a main verb, as in (20c)). That the two are written together as one word in Amharic I take to be merely an orthographic convention. In Bantu, too, subject agreement shows up on both the tense-bearing auxiliary and the main verb if (and only if) they are separate words, as Kinyalolo (1991) discusses at length.

"lose"-type verb in its dyadic incarnation, or a "give"-type verb in the passive. Both have a structure like (35).[19]

(35) $[_{TP}$ [[$[_{VP}$ $[_{PP}$ $Ø_P$ Almaz] story tell-PASS] F] (v)] T] (=(16a))
Lemma child lose (=(20b))
(opt'l)

First, F agrees with the affectee (*Almaz*, *Lemma*): that is the closest argument, just as it is in the active version of "tell," and F is not troubled by the PP shell, since it has no EPP feature to be concerned with. Next T/Asp comes into consideration. It definitely cannot agree with the affectee, because it does have an EPP property, just as in (34). The new question is what happens next. There seem to be two likely possibilities: either T agrees with the theme "money"/"story" and that moves to SpecTP to satisfy the EPP, or an expletive is inserted in SpecTP and T agrees with it, just as in (34).

Indeed, both possibilities seem to be attested. (36) gives a version in which T shows explicit agreement with the theme:

(36) Ləmma-n **sejt** **lid͡ʒ-u** t'əffa-**t͡ʃt͡ʃ**-əw.
Lemma.M-ACC female child-3mP lose-3fS-3mO
'Lemma lost his daughter.'

Notice that the affected argument *Lemma* is also marked accusative here (and not genitive; cf. note 9). We can attribute that to "daughter" c-commanding it after it moves to Spec,TP to satisfy T's EPP feature.[20] The fact that *Lemma* is sentence initial in this example is then the result of topicalization, as assumed

[19]Here I put aside possible questions of how the agent of a passive is represented syntactically. If there is a null category expressing the agent in the syntax in Amharic, then it is invisible for case and agreement.

[20]Baker and Vinokurova (2010) assumed that (the Sakha version of) (3) applies immediately, whenever the configuration it describes is first built. Hence it can in principle happen either before or after A-movement. That assumption works here in Amharic too. The accusative rule does not apply before the theme moves to SpecTP, because the goal does not c-command the theme, being embedded in PP (see (39)). The configuration described in (3) then does hold after the theme moves to SpecTP, and accusative is assigned to the affected argument. This can be contrasted with a transitive structure in which the object is scrambled to a position before the subject (like (7c)). Then accusative is assigned to the object immediately when the subject is merged in Spec,vP. The object then can move to a higher position, but it takes its accusative case with it. It does not trigger accusative case on the subject, since (3) does not apply if the higher NP is already marked for case. So NP movement feeds case assignment in structures like (38), but not in certain other cases. (Other assumptions about timing would probably also work here. For example, one could say that (3) always applies at Spell Out (after movement) but it only considers copies of NPs in A-positions. That would, however, force me toward the view that clause internal scrambling is always A-bar movement in Amharic — an issue that has not been investigated, as far as I know. I thank Ruth Kramer (personal communication) for pressing me to clarify this matter.)

also by Amberber (2005, pp. 311–312).[21] In contrast, (37) gives examples in which T shows default third person masculine agreement, rather than agreement with the feminine or plural theme argument.

(37) a. Ləmma sejt lidʒ-u t'əff-**a**-w.
Lemma.M female child-DEF lose-3mS-3mO
'Lemma lost his daughter.'

b. (?)Sost lidʒ-oʧʧ all-**ə**-ɲɲ
three child-PL exist-3mS-1sO
'I have three children.'

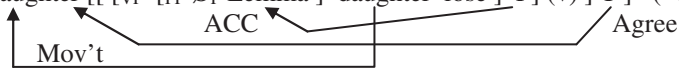
We may take these to be examples in which an expletive is inserted in SpecTP and T agrees with that. Notice that neither argument is accusative in (37). This is expected: the affectee is c-commanded only by the expletive, not by an argument, and the theme is not c-commanded by the affectee given that the affectee is embedded in PP. Hence (3) does not mark either NP as accusative. The two outcomes are summarized in (38) and (39)[22]:

[21]Topicalization of the affectee in sentences like (36) seems to be preferred, but not absolutely required; I have a similar sentence with theme-affectee order (with the passive of "tell," see also (45b)). Conversely, A-bar fronting of the theme is possible to give theme-affectee order in sentences like (37a) and (41a), but this is less preferred. Given the possibility of information structure-movements, then, case and agreement are more reliable indications of the structural positions of nominals than surface word order in sentences like these.

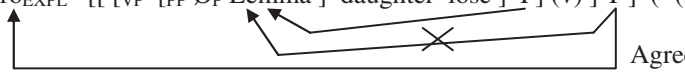
[22]One anonymous reviewer expresses some concern that I attribute a significant structural difference to (38), (39), and (41), when the only apparent difference is in case and agreement. In particular, I assume that the affected argument is in a topic position in (36) but not (necessarily) in (37a), and that the theme is in SpecTP in (36) but not in (37a), this underlying the differences in case and agreement. While I do not presently have independent evidence for these differences, my view tentatively predicts that other relevant differences between sentences like (36) and (37a) may come to light — say differences in quantifier scope, or binding theory, or information structure — confirming the structural difference. If this proves false, one might want to look for simpler alternatives. It is clear, however, that one does *not* want to account for the differences between (36), (37a), and (41) simply by saying that accusative marking and agreement on T/Asp in gender and number are optional in Amharic *in general*. That would be false: accusative case is obligatory on a name functioning as the object of a transitive verb (like (2)), and number-gender agreement on T/Asp is obligatory with the argument of a simple unaccusative (like (1a)). We must say, then, that it is something about this particular kind of structure that these things become (apparently) optional just here in Amharic. My account in terms of how the EPP feature of T is to be satisfied has this desirable property.

Ruth Kramer (personal communication) reminds me that the possessive construction with *allə* in (22c) is a bit different from the others in that it does not allow accusative on the possessor (affectee) argument, so there is no (36)-like analog of (37b), although there is a (41)-like analog. Within my analysis, this suggests that the derivation in (38) is not allowed for this verb. I have no particular insight into why this should be, other than to observe that similar restrictions are found with special locative-existential-possessive verbs in other languages (e.g., French *Il y a trois hommes ici* "There are three men here" but **Trois hommes y a ici* "Three men are here").

(38) [$_{TP}$ daughter [[[$_{VP}$ [$_{PP}$ Ø$_{P}$ Lemma] daughter lose] F] (v)] T] (=(36))



(39) [$_{TP}$ pro$_{EXPL}$ [[[$_{VP}$ [$_{PP}$ Ø$_{P}$ Lemma] daughter lose] F] (v)] T] (=(37a))



It is instructive to compare these Amharic structures with similar ones in the related Semitic language Hebrew, as analyzed by Preminger (2009). Like Amharic, Hebrew has unaccusative verbs that appear with an affected argument as well as a theme, and such structures can be realized in at least two ways, shown in (40).

(40) a. Nafl-al le-Dani ha-cincenet. (or *nafl-a* 'fell-3fS')
fell-3mS DAT-Dani the-jar(FEM)
'Dani's jar fell on him.'

b. Ha-cincenet nafl-a le-Dani. (**nafl-al* 'fell-3mS')
the-jar(FEM) fell-3fS DAT-Dani
'Dani's jar fell on him.'

The optionality of moving the theme to SpecTP is more apparent in Hebrew than in Amharic, because of its head-initial character: that movement clearly happens in (40b) but not (40a). As in Amharic, this difference goes along with a difference in agreement: agreement on T with the theme is required in (40b), but not in (40a), which can have default agreement, arguably with an expletive pro in SpecTP. One difference between the two languages is that Amharic has object agreement (with the affectee) and Hebrew does not. The other difference is case-theoretic: the affectee in Hebrew always has dative case, whereas dative is not assigned in this context in Amharic.[23] Rather, the accusative case rule in (3) applies if and only if the theme raises to SpecTP.

Interestingly, there is a third option in both Amharic and Hebrew. Preminger reports that it is possible for the verb to agree with the theme argument even if the theme has not raised to SpecTP, as indicated in (40a). The Amharic equivalent would be examples in which the verb shows Type 1 agreement with the theme, but accusative case is not triggered on the affectee. Indeed, this is also possible, as shown in (41); in fact, this is easy to elicit and may be the most common realization of this type of structure.

(41) Ləmma **sejt** **lid͡ʒ-u** t'əffa-**tʃtʃ** -əw.
Lemma female child-DEF lose-3fS-3mO
'Lemma lost his daughter.'

[23]Preminger also assumes that the dative NP in (40) originates as a possessor inside the theme, whereas I see no compelling need to assume this for Amharic (although I do not rule out the possibility either).

Preminger argues that this is possible in Hebrew when the theme undergoes a short movement, not moving higher than the affectee, but just high enough that the two are equidistant from T (it moves to an inner Spec of ApplP, in his terms). I tentatively assume that this is possible in Amharic as well.[24] The choice of these various derivations accounts for the apparent optionality of accusative case on the affectee in these dyadic unaccusative constructions: accusative case marking is obligatory whenever possible, but three slightly different derivations are available from the same underlying source.[25]

We can return now to a loose end from above. Amberber (2002, 2005) says that accusative case marking is optionally possible not only on the affectee of dyadic verbs and passivized ditransitive verbs, but also on the sole argument of monadic experiencer verbs like (22). Why is this? In fact, as observed by Leslau (1995, p. 435) and Amberber (personal communication), these verbs need not be monadic after all. Many of them are also possible with a cognate argument related to the verb stem, as shown in (42).

(42) Rab rab-ə-ɲɲ. (compare (22b))
Hunger hunger-3mS-1sO
'I'm hungry', lit. 'Hunger hungered to me.'

Cognate arguments usually occupy the theme slot of verbs, presumably for principled reasons (e.g., English *I danced a dance*). So *rab* "hunger" in (42) is presumably an experiencer-theme verb, similar to "lose" or "die." As such, we expect accusative case to be optional on the affectee argument, depending on whether *rab* "hunger" moves to SpecTP or not. (This has no visible effect on agreement, because "hunger," like most nonhuman nouns, is masculine

[24]One would need to say why this short movement is not possible in ditransitive constructions, however, allowing F to agree with the theme rather than the goal. An alternative might be to say that null headed PPs may or may not count as defective interveners between T and the theme NP, depending on what features are attributed to the PP. Also to be clarified is how the EPP feature of T is satisfied in (41).

What is not allowed in Hebrew is for the theme to raise to SpecTP without T agreeing with it ((40b)). The Amharic equivalent would be a structure in which the affectee is accusative but there is no Type 1 agreement with the theme. Indeed, this combination of properties was rejected by my consultant.

[25]One residual question about these dyadic nonagentive structures, raised by two anonymous reviewers, is how the theme argument is licensed in the (39) version of the structure, given that neither F nor T agrees with it, nor is its case marked by (3). One might think, then, that it should be ruled out by the Case filter or its current descendants. I do not have a definitive answer to this beyond that the data show that the structure is possible. One possibility is that default nominative case is freely available in Amharic. Another (almost equivalent) is that there is simply no Case filter-like licensing condition active in Amharic syntax; see Marantz (1991), McFadden (2004), and related work for this view. A third is that some kind of special licensing is available for (some) theme arguments, related to what I and others have called abstract or pseudo noun incorporation (see Baker (2011) for some evidence of pseudo-incorporation in Amharic). I do not currently have a principled basis for choosing among these theoretical options.

singular). We may assume, then, that the examples in (22), in the (less common) versions when they have accusative case on the experiencer, have a pro-dropped cognate NP in SpecTP. The seemingly monadic experiencer verbs may thus converge with the dyadic ones, if these cognate arguments are widespread.

Finally, for completeness, consider the passive of a triadic verb like "rob," whose middle argument is a direct one, NP rather than PP. These are essentially like a simple unaccusative or passive construction. The structure is:

(43) [$_{TP}$ Aster [[[$_{VP}$ [$_{DP}$ ~~Aster~~] suitcase PASS-rob] F] (v)] T] (=(17))

Mov't ACC Agree

F agrees with the higher internal argument, the source, as usual. But T can also agree with this argument, because it is not in a PP; indeed, it must because it is the closest NP to T as well. The verb shows subject agreement with the source, and object agreement with the source is suppressed at PF (Kinyalolo's Constraint). Neither T nor F can agree with the theme, because the source intervenes, so the theme is not agreed with at all. The source raises to SpecTP to satisfy the EPP. It is thus higher than the theme both before and after NP movement, so there is no doubt about how accusative case assignment applies: the theme "suitcase" must be marked accusative. The cluster of differences that distinguish the passive of "rob" from the passive of "give" thus follows on this approach.

I conclude that this is a successful view of what the direct/oblique distinction in Amharic amounts to. When this is cashed out as a matter of whether the argument is projected as a simple NP or a null headed PP, the differences with respect to case and agreement can be made to follow without wholesale changes to the principles of case and agreement that apply in simple transitive structures, as desired.

6. ISSUES ARISING

The main goal of this chapter has been to argue for an oblique/direct distinction in the argument structure of verbs in Amharic, and to show how that distinction plays out in the syntax. This distinction, if accepted, raises several interesting theoretical questions. Here I mention some of these and make a few brief and tentative remarks about them.

6.1. Is Obliqueness Semantically Predictable?

One question is whether the oblique/direct distinction is semantically predictable or lexically idiosyncratic. If it is the latter, then it must presumably

be marked explicitly in the argument structures of particular verbs. Then verbs must have argument structures.

In fact, the data I have seems to pull both ways. On the one hand, only "affectees" have the option of being oblique; canonical agents and themes apparently do not. Amberber (2002, p. 23) cites verbs like "think" as either taking a direct argument (*assəb-h*^{w} "think.PF-1sS") or an oblique one (*t-assəb-ə-ɲɲ* "PASS-think.PF-3mS-1sO"), and this goes along with a difference in meaning: the first form means "I thought about something" (agentive subject), the second "It occurred to me" (experiencer subject). Similarly, we saw above that source arguments of triadic verbs are direct, whereas goal arguments of triadic verbs are oblique. But, on the other hand, the literature also gives minimal pairs with no identified semantic difference. Leslau (1995, p. 436) says that "become tired" can be an impersonal verb or a simple unaccusative with no obvious change of meaning; Amberber (2002, p. 20) says something similar for "worry," among others. It is possible that the sole argument of these verbs is sometimes a theme (hence direct) and sometimes an experiencer (hence oblique), but we have no evidence yet to support such a thematic difference. Furthermore, the source argument of a verb like "rob" can be semantically very similar to the malefactive argument of the applicative form of the same verb. This is illustrated by the pair in (44), where a native speaker would not necessarily distinguish sharply the meanings.

(44) a. Ləmma Aster-in gənzəb sərrək'-at. (cf. (9))
Lemma.M Aster.F-ACC money rob-(3mS)-3fO
'Lemma robbed Aster of money.'

b. Ləmma Aster-in gənzəb sərrək'-ə-bb-at.
Lemma.M Aster.F-ACC money rob-3mS-on-3fO
'Lemma robbed money from/against Aster.'

Nevertheless, the source argument is direct, and the malefactive argument is oblique, as becomes evident when the two constructions are passivized, as in (45). For example, the affectee triggers subject agreement in (45a), but object agreement in (45b).

(45) a. **Aster** ʃant'a-wa-n tə-sərrək'-əʧʧ. (=(17))
Aster.F suitcase-3fP-ACC PASS-rob-3fS
'Aster was robbed of her suitcase.'

b. Gənzəb-u **Aster-in** tə-sərrək'-ə-bb-**at**. (contrast also (19))
money-DEF Aster.F-ACC PASS-rob-3mS-on-3fO
'The money was stolen on Aster.'

Nor do I have a principled theory of why goals should project PP structure whereas sources do not in this language, to make the difference a principled

one.[26] More detailed lexical semantic work on a verb-by-verb basis is needed to clarify this issue.

6.2. Why Can Only Certain Arguments be Oblique?

A second question is why only affectees — such as the middle arguments of ditransitive verbs — have the option of being oblique. Why doesn't this option exist for highest arguments (agents), or for lowest arguments (themes)? Here I simply toss out a conjecture. Suppose that, in fact, arguments with affectee type theta-roles are always projected in the SpecApplP position, one of the two options I left open in the main discussion. Then the fact that they are middle arguments follows from the position of Appl in the functional structure of the clause: above VP (which contains the theme) but below v (which selects the agent). Now perhaps only Appl can license a null-headed PP (of the transparent type; cf. note 17), because the Appl head itself has essentially the same meaning as a P (e.g., λx λe benefactive(x, e): compare Parsons (1990, p. 14) on *for* with Pylkkänen (2008, p. 12) on Appl). The possibility of synonymy between Appl and P might make Appl uniquely able to license a null P by something like Emonds's (1987) Invisible Category Principle. Then SpecApplP could be NP or PP, but other argument positions would consistently be NP.

6.3. Is the Oblique–Direct Distinction Universal?

The next question is whether the oblique–direct distinction is something particular to Amharic, or whether it is universal, present in all languages. First impressions suggest that it is not universal: there seems to be no comparable distinction in the Bantu languages, for example. Chichewa has no known monadic verbs whose argument triggers object agreement rather than subject agreement. Even psych verbs show subject agreement with their argument:

[26] An anonymous reviewer asks if there could be a language which is the opposite of Amharic, in which goals are direct and sources are oblique. I do not know; probably much more data from a variety of languages needs to be collected before this becomes clear. But consider the difference between (i) and (ii), which exists (to varying degrees) in many versions of English:

(i) John was given a book.
(ii) ??John was made a sandwich. (cf. I made John a sandwich.)

One might consider the somewhat mysterious deviance of (ii) to be an effect of (30a–c), as in Amharic. If so, then goal arguments are direct in English and benefactives are oblique. This would be a fairly stable thematic distinction, but a different one from the one that seems to hold in Amharic.

Note also that English does not allow source arguments to be projected as either NP or PP with null P, but only as overt PPs. This is striking in an example like *John stole Mary a bicycle*, which can only mean that John stole a bicycle *for* Mary, not that he stole it *from* her, as is possible in Amharic and other languages. So the particular source-goal contrast in Amharic may well not be universal.

(46) **A-kazi** **a-**dza-zunzik-a. (Mchombo, 2004, p. 37)
2-women 2S-T-suffer-FV
'The women will suffer.'

Nor do the Bantu languages have triadic verbs whose goals resist moving to the subject position and agreeing with T, the way Amharic does (compare with (16) above):

(47) a. Mbuzi zi-na-pats-idw-a nsima. (Baker, 1988, p. 282)
goats SP-T-give-PASS-FV cornmush
'The goats were given cornmush.'

b. *Nsima i-na-pats-idw-a mbuzi.
cornmush SP-T-give-PASS-FV goats
'The goats were given cornmush.'

What is the nature of this crosslinguistic difference?

An obvious possibility is simply that arguments are never marked oblique in Bantu; there is no $Ø_P$. That would be a significant difference in the kinds of argument structures allowed in one language as compared to another, possibly confirming the need for argument structure within the theory, where the difference can be expressed.

But there is another option. One might say that argument structures in Bantu are the same as in Amharic and the parametric difference is in (30c): an NP can move out of a null-headed PP to SpecTP in Bantu. If so, there will be no objection to T agreeing with this argument in Bantu (even though (30b) does hold in Bantu; see (31)).

Indeed, a scrap of evidence for this second version might be gleaned from Baker (1988). There I observed that the goal argument of a ditransitive verb resists *wh*-movement in Chichewa, as in English.

(48) *Iyi ndiyo mfumu imene ndi-ku-ganiz-a kuti Mavuto
this is chief which 1sS-T-think-FV that Mavuto
a-na-umb-ir-a – mtsuko. (Baker 1988, p. 290)
SP-T-mold-APPL-FV waterpot.
"This is the chief that I think that Mavuto molded a waterpot ??(for)."

I attributed this to the presence of a null P governing the goal/benefactive argument; see also Landau (2007, 2010) for very similar claims. Now what happens when this argument moves to the subject position in passive, as allowed in Chichewa (and sometimes English)? To the extent that this is possible, the difficulty in extraction seems to go away: the moved goal is extractable to the same degree that a normal subject is:

(49) a. I think that the chief was given/?molded a waterpot.
b. This is the chief that I think was given/?molded a waterpot.

That is what one would expect if goal passives in Chichewa and English separate the goal NP from the null PP that originally contained it. This

evidence is only suggestive, though, because a full account of the effect in (49) remains elusive, and because the sort of evidence that motivates the null P in Chichewa and English is quite different from that which motivates the null P in Amharic. We therefore need to be somewhat cautious about combining the two analysis fragments.[27]

6.4. Possible Implications for Projectionism versus Constructionism

Finally, we can ask what bearing this material might have on current debates about whether verbs have argument structures from which syntactic structure is projected, or whether syntactic structure is freely constructed, with verbs slotted in to give results that are more or less felicitous depending on real world knowledge. Unfortunately, I suspect that the answer to this question depends on the questions raised earlier in this section about how the material covered here fits into a larger picture — points on which I have been less than definitive. But at least we can think through what we are looking for.

At a minimum, constructionism will have to evolve somewhat to account for data like that discussed. The way that constructionism has been done so far, in say the work of Borer (2005), is to have NP arguments of all kinds introduced directly into the specifiers of relevant functional categories. Strictly adhered to, this gives differences in hierarchical position, but no obvious equivalent to my direct–oblique distinction. The material here shows that something more is needed, in the form of PP structure for some such arguments but not others. We would need, then, some new ways of introducing arguments into syntactic structure.

But if it turns out that the oblique–direct distinction is both semantically motivated (Section 6.1) and universal (Section 6.3), then the change might prove to be a minor one. One could say that a particular structure that includes a null PP has such and such interpretation in all languages (or perhaps in a parametrically defined subset of languages). Some verbs may be more naturally compatible with that meaning than others are (e.g., "tell," but not "rob"), hence more compatible with the structure. But that could be taken to be a feature of our knowledge of the real world properties of telling events as opposed to robbing events, not something that requires a true argument structure as that has traditionally been understood. Then the new factor argued for here could be adopted by constructionists as a friendly amendment, compatible with their leading ideas.

[27]Note, for example, that the text interpretation of (48) and (49) is probably not compatible with the suggestion for English mentioned in note 26. Adopting that too, we would then have to say that goal arguments can strand a null P, but benefactive ones cannot, and it is not obvious why that should be.

But if it turns out that which arguments are oblique and which are direct varies somewhat idiosyncratically within a certain subdomain of lexical items in Amharic, then one needs to record that not-fully-predictable lexical information somewhere. A traditional argument structure would be the obvious place to do so. Moreover, if it turns out that languages differ somewhat as to which classes of arguments are to be treated as direct and which as oblique, that too needs to be recorded somehow in the native speaker's knowledge of the particular language. Again, the argument structures of particular verbs (or generalizations over them) might be the best place to do this. If so, then some notion of argument structure may prove necessary.

Which is correct? If I had to place a bet, I would place it in favor of argument structure. It seems likely that the direct–oblique distinction is not 100% semantically predictable in Amharic, and that there is a real difference here between Amharic and some other languages. But I am not ready to bet very much yet. The more important point is that we should find out, because this might prove to be a way of investigating these broad conceptual questions about argument structure in an empirical way.

7. CONCLUSION

In this chapter, I have argued that verbs in Amharic need to be classified for something more than the number of arguments that they take and the relative hierarchical order of those arguments. Certain verbs also need to be classified as to whether one of their arguments is "direct" or "oblique," projected as an NP or as a null headed PP. These two kinds of arguments behave quite differently for purposes of agreement, movement, and case. I claimed that the differences trace ultimately to the fact that the PP arguments cannot satisfy T's EPP property, hence they resist subject agreement but not object agreement. Whether the oblique–direct contrast is predictable from lexical semantics, and whether it is universal or particular to Amharic, are significant questions for further research to clarify. How these questions turn out may well bear on whether reductionist approaches that deny the need for traditional argument structures are sufficient or not.

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data can be found in works by real Amharicists such as Leslau (1995) and Amberber (2002, 2005). Special thanks are due to Ruth Kramer and Mengistu Amberber for their comments on this work and ongoing discussions of Amharic morphosyntax. I also thank the participants of the "End of Argument Structure?" workshop at the University of Toronto, where this work was first reported, for lively discussion, and two anonymous reviewers for comments that have led to certain improvements. Any errors of fact or interpretation are my responsibility.

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4

THE ANTIPASSIVE AND ITS RELATION TO SCALAR STRUCTURE

David Basilico

ABSTRACT

This chapter provides an analysis of the syntactic and semantic differences between the ergative, transitive construction and the intransitive, antipassive construction in Inuit that also explains the use of the antipassive marker as a marker of inchoative aspect. The analysis relies on the notion of a scale or path that provides a measure for the change that an event participant undergoes, as well as the notion familiar from Distributed Morphology that an acategorial root combines with a verbalizing head. The antipassive suffix *–si* is analyzed as the head of a light verb that provides an event, and the complement to this light verb is a scale or path that provides the measure of change. In the antipassive, the oblique NP provides a scale, with the verbal root adjoined to *–si* as a manner component. In the inchoative, an intransitive VP provides the scale, with no manner element adjoined to the light verb. The transitive/antipassive alternation is seen as an alternation between a result/manner interpretation of the verbal root. Thus, the transitive/antipassive alternation is not simply a matter of changing the valency of the verb but involves changes of

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the scalar structure of the clause and the interpretation of the verbal root. The analysis of the polyfunctionality of the *–si* morpheme given here, which appeals to the scalar structure of the clause, suggests a new line of research for further explorations into the nature of middle marking in general.

Keywords: Antipassive, Inuit, scalar structure, manner/result verbs, aspect, polyfunctionality

1. INTRODUCTION

In several languages, there is an intransitive construction termed the antipassive in which the object of the corresponding transitive sentence appears in an oblique rather than a structural case. The following Inuit (South Baffin) example is from Macdonald and Spreng (2006), cited in Clarke (2009).

(1) a. Anguti-up nanuq quqir-jaa
man-ERG polar.bear.ABS shoot-PART.3SG/3SG
The man shot the polar bear.

b. Anguti quqir-**si**-juq nanu-mik
man.ABS shoot-AP-PART.3SG polar.bear-OBL
The man is shooting/shot at a polar bear.[1]

Example (1a) shows the transitive variant. The subject is in the ergative case and the object is in the absolutive case. The verb also shows agreement with both the subject and the object. In (1b), we see the antipassive variant. The verb is suffixed with the antipassive morpheme *-si*. The subject is in the absolutive case and the object is in an oblique case. The verb shows agreement with the subject only. Thus, with the antipassive the clause is semantically transitive, in that there are two arguments present, but syntactically intransitive, in that agreement and case morphology reflect an intransitive structure.

In addition, as can be seen from the translations, there is also an aspectual difference between the transitive and antipassive sentence. This aspectual difference has been characterized in many different ways: the antipassive is seen as irresultative (Siegel, 1999), atelic and imperfective (Spreng, 2006), or durative (Clarke, 2009).

Another interesting feature of the antipassive morpheme in Inuit is its "polyfunctionality." Not only does the *–si* suffix attach to a transitive verb to create an intransitive, antipassive structure, it can also attach to an unaccusative

[1]List of abbreviations: ERG: ergative case; ABS: absolutive case; AP: antipassive morpheme; IND: indicative mood; PART: participial mood; OBL: oblique case; TR: transitive; INTR: intransitive; LOC: locative case; DAT: dative case; AOR: aorist; INS: instrumental case; SG: singular; 3: 3rd person.

intransitive verb to encode inchoative aspect. These Inuit examples are from Bok-Bennema (1991) and Bittner and Hale (1996).

(2) a. Miiqqat piqqip-p-u-t
children healthy-IND-[-TR]-3PL
The children are healthy.

b. Miiqqat piqqis-**si**-pp-u-t
children healthy-AP-IND-[-TR]-3PL
The children are getting well.

(3) Qaqor-**si**-voq
white-AP-IND.3SG
It became white.

(4) Taar-**si**-voq
dark-AP-IND.3SG
It became dark.

Though these different uses may be apparent cases of homophony, Bok-Bennema (1991) considers these instances of *–si* to be the same. But if they are instances of the same suffix, then the question arises of what unifies these distinct uses of *–si*.[2]

The aim of this paper is to explain the syntactic and aspectual differences between the ergative and antipassive and show how the explanation for these syntactic and semantic differences allows us to capture the polyfunctionality of the *–si* morpheme. I will demonstrate that in the transitive, ergative structure, the verbal root is interpreted as a *result* component, while in the intransitive, antipassive structure, the verbal root is interpreted as a *manner* component. With regard to the NPs, in the transitive, ergative structure, the absolutive NP is a true argument that is the undergoer of the action, while in the intransitive, antipassive structure, the oblique NP acts is not an undergoer but provides a scale (or the reference object for a scale) for the event. A scale (or path) is an element that provides a measure for the change that an event participant undergoes. It is this result/manner and undergoer/scale distinction that accounts for the difference in aspect and actionality seen between the ergative and the antipassive.

Furthermore, once it is recognized that the oblique NP in the antipassive serves as a scalar element, we can see how to incorporate the inchoative use of *–si* into the analysis. Here, a parallel is made between the oblique element in the antipassive and the verbal element in the inchoative: both supply a scalar element.

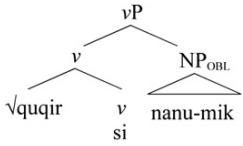
[2]The *–si* suffix is also used as an inceptive suffix (Spreng, 2006) as well as an incorporating verb (Bok-Bennema, 1991). I discuss the inceptive use in Section 4.

To make this parallel more concrete, I analyze *–si* as a verbal head that introduces an event (see Spreng (2006) for a different proposal that *-si* is a *v* head). It takes as its complement an element that provides the scale or path for the event.

(5) $[_{vP}\ [_{v'}$ si [SCALE]]]

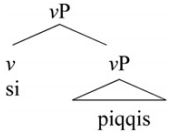
In the antipassive construction, the verb root adjoins to the antipassive head and provides the manner component for the event introduced by the suffix. The oblique NP then merges as a complement to the antipassive head; in this case, it functions as the reference object for a spatial path scale along which the event is oriented.

(6)



In the inchoative construction, there is no manner component to the event introduced by the suffix *–si*. Here, the head *–si* takes the intransitive verb phrase as its complement, with the property expressed by the verb itself functioning as the scale. The verb later moves to the *–si* head through incorporation.

(7)



The organization of the paper is as follows. First, I provide a background on the notion of scalar or path elements and the manner/result distinction. Next, I motivate the basic analysis, showing how several of the syntactic and semantic differences between the ergative and antipassive can be explained by treating the verb underlying the ergative construction as a result verb, while that of the antipassive construction as a manner verb. I also give the specific syntactic structures associated with each construction. Then, I respond to apparent challenges to the manner/path analysis of antipassive verbs. With the analysis of the antipassive in place, I then show how it can be extended to explain the polyfunctionality of the antipassive morpheme, specifically focusing on the use of *–si* as an inchoative as well as an inceptive morpheme. Before concluding, I return to discuss the antipassive construction further, demonstrating how the analysis given here can accommodate the appearance of additional arguments in the antipassive that are not present in the ergative.

2. BACKGROUND ON SCALES

A scale or path is an element that provides a measure for the change that an event participant undergoes (see Beavers, 2008; Hay, Kennedy, & Levin, 1999; Krifka, 1987, 1992; Levin & Rappaport Hovav, 2010; Ramchand, 2008; Rappaport Hovav, 2008; Rappaport Hovav & Levin, 2010; Tenny, 1994). Three basic kinds of scales have been identified: extent, property, and spatial path scales. Consider the following examples, modified from Beavers (2008).

(8) a. John ate an apple.
b. John wiped the table clean.
c. John walked into the house.

In each case, there is an element through which the progress of the event proceeds. In (8a) the direct object provides the path or scale. Here, the event proceeds through the volume of the direct object "an apple"; when the apple's volume reaches zero, the event concludes. In this case, the direct object is considered to be an extent scale. The sentence in (8b) is a bit different; it is the resultative adjective phrase "clean" that provides the scale. As the event proceeds, the table gets cleaner and cleaner and when the table reaches a state of cleanliness, the event concludes. Here, the adjective phrase "clean" provides a property scale. In (8c), it is the spatial path provided by the prepositional phrase "into the house" that determines how the event proceeds. The figure "John" travels the spatial path from his starting location to the location of being in the house. When John reaches the house and is in the house, the event concludes. In each of these cases, there is a homomorphism between the scale structure and the event structure, such that the parts of the scale are mapped into the parts of the event, preserving the ordering relation of the parts or degrees of the scale with the temporal ordering relation of the event.

In the above examples, the element that provides the scale is its own syntactic constituent. However, there are cases where the scale is lexicalized by the verb itself, as in (9). Here, the property scale of "dryness" through which the event proceeds has been lexicalized by the verb itself.

(9) John dried the coffee beans.

Unlike property or extent scales, spatial path scales appear most of the time (but not always) with a reference object that gives the point in space that forms the basis for creating the path; the path becomes the set of points between the location of the figure element and the location of the reference object. In a sentence such as (10) below, the object of the preposition, "the lake," is the reference object; the spatial path that is created is the set of points between the location of the figure element "the dog" and "the lake."

The event moves the dog along the path as it gets closer to the location of the lake.[3]

(10) The dog ran to the lake.

Another important distinction with respect to path or scalar structure has to do with the difference between two-point and multipoint scales, which mirrors the distinction between gradable and nongradable adjectives (Beavers, 2008; Levin & Rappaport Hovav, 2010; Rappaport Hovav, 2008). So with an adjective such as "dry," there are many points along the scale of dryness, while with an adjective such as "dead," there are only two-points, dead and not dead. Likewise, with some verbs that lexicalize a scale, they lexicalize a two-point rather than a multipoint scale. For example, in sentence (11), the verb "cracked" lexicalizes a two-point scale. The direct object "the window" transitions from not having the property of being cracked to having the property of being cracked; there are no in between values with respect to this property.

(11) The teenagers cracked the window.

On the other hand, sentence (9) shows a verb which has lexicalized a multi-valued property scale; in this case, there are many values of "dryness."

Verbs which lexicalize a property or spatial path scale are considered to be "result verbs" in Levin and Rappaport Hovav (2010). There are other verbs which lexicalize a nonscalar change, such as "crawl," "flap," "laugh," "jog," etc. In these cases, the change lexicalized involves many different types of movements and does not involve a change along an ordered set of points. Many of these verbs are "manner" verbs since the verb lexicalizes the manner of the event, not the result; Levin and Rappaport Hovav (2010) give the following examples that contrast manner verbs and result verbs.

(12)

Manner	Result
hit	break
jog	go
wipe	clean
spray	cover

Syntactically, Ramchand (2008) considers that such path elements occur as the complement to an eventive verbal head.[4] I will incorporate this view into the

[3]There is a counterpart to the reference object of the path scale in the property scale domain, and that is a contextually determined standard of comparison that gives some degree or value on the scale. The change associated with the verb will either be an increase or decrease from that contextually determined value on the scale. For example, with a deadjectival verb such as "cool," the change involves a decrease in value of "coolness" in comparison to the standard. This standard of comparison is not expressed syntactically and will not figure in the discussion here.

[4]More specifically, in Ramchand's "first phase syntax," the path element occurs as a complement to a *proc* (for process) head that has the undergoer in its specifier position. This

discussion here and treat the path or scalar element as a complement to a verbal head, though I do not adopt Ramchand's specific analysis.

3. THE ERGATIVE/ANTIPASSIVE DISTINCTION AS A RESULT/MANNER DISTINCTION

Using the terminology of Levin and Rappaport Hovav (2010), I argue that the difference between the antipassive and the ergative is that the antipassive involves a manner verb, while the ergative involves a result verb. Treating the contrast as a manner/result distinction with the oblique object functioning as a scalar element (or the reference object for a scale) allows us to explain three interesting properties of the antipassive construction. First, as noted above, the antipassive construction is aspectually different from the ergative, in that the antipassive is seen as irresultative or imperfective. Second, in the antipassive construction, the object may be omitted. Third, with some verbs, the antipassive construction appears with no antipassive suffix; the verb is conjugated intransitively and the object appears in the oblique case. I turn to each of these properties below, showing how the manner/result distinction can explain the properties that we see.

3.1. Aspectual Differences

As noted above, there is an aspectual difference between the ergative, transitive construction, and the antipassive construction. While the difference has been described in a number of different ways, Catford (1976) sums it up best: "'antipassivization' ... highlights the ACTIVITY, and thereby takes some weight off its EFFECT upon the object." The aspectual effects of the antipassive are seen in languages other than Inuit, as the following examples show.

(13) Inuit (Baffin Island) (Spreng, 2005)

a. kapi-jara
stab-PART.1SG/3SG
I stabbed him.

b. kapi-**si**-juq
stab-AP-PART.3SG
He is poking someone.

(14) Chamorro (Cooreman, 1994)

a. Un-patek i ga'lago
ERG.2SG-kick the dog
You kicked the dog.

head itself is the complement to an *init* (for initiation) head that has the initiator for the event in its specifier position. In addition to taking a path element as a complement, the *proc* head can take a *res* (for result) head as a complement.

b. Mamatek hao gi ga'lago
AP-kick 2SG.ABS LOC dog
You kicked at the dog.

(15) Bzeduh (Hewitt, 1981)
a. č'ale-m ç'əg°ə-r (0)-j-e-ʒ°e
boy-ERG field-ABS 3SG.ABS-3SG.ERG-DYN-plough
The boy is ploughing the field.

b. č'ale-r ç'əg°ə-m (0)-j-e-ʒ°e
boy-ABS field-OBL 3SG.ABS-3SG.ERG-DYN-plough
The boy is ploughing away at the field.

(16) Karbardian (Catford, 1976)
a. ɦe-m qwipŝɦre-r jedzaq′e
dog-ERG bone-ABS bite
The dog bites the bone (through to the marrow).

b. ɦe-r qwɨ psɦre-m je[w]dzaq′*e*
dog-ABS bone-ERG [ANTIPASS]-bite
The dog is gnawing the bone.

(17) Chukchee (Kozinsky, Nedjalkov, & Polinskaja, 1988)
a. ətləg-e keyŋ-ən penrə-nen
father-ERG bear-ABS attack-3SG.3SG/AOR
The father attacked the bear.

b. ətləg-en penrə-tko-gʔe kayŋ-etə
father-ABS attack-AP-3SG/AOR bear-DAT
The father rushed at the bear.

If we consider the meaning difference between the ergative and the antipassive, note that the antipassive construction encodes basically the same event as the ergative, but without any result necessarily taking place. So, for example, in (13), Spreng (2006) notes that in the transitive use of the verb, the sentence is interpreted as a stabbing event "with potentially fatal results", while the antipassive is interpreted as an iterative, poking event. Here, a "stabbing" event and a "poking" event involve the same process, but with a "stabbing" event, there is actually a result in which the object is pierced. A "poking" event involves the same action as a "stabbing" event, but there is not necessarily a result; the object is not pierced.

Each of the other examples also involves a similar contrast of manner versus result. In the Chamorro example, in the ergative the dog must actually be kicked, while in the antipassive the event involves the same manner, but the dog need not actually be kicked. Here, the use of the English conative construction in

the translation highlights the irresultativity of the event. Likewise, in Bzeduh, the ergative implies an effect has actually taken place with respect to the field, while the antipassive focuses more on the agent's activity of ploughing, with the action "not affect[ing] the [object] completely, directly or permanently" (Cooreman, 1994, p. 60). In Karbardian, the difference between a "biting" event and a "gnawing" event only involves an effect on the object itself; both events involve using the mouth and teeth in a particular manner, but only with a "biting" event must something happen to the object in which the teeth actually pierce the object through. The antipassive does not imply such a result, involving only the action of the teeth and mouth. Finally, with the examples from Chukchee, an event of attacking someone or something would involve the same manner of action as rushing at someone or something, but the event of attacking would imply some resulting combat and/or effect on the object of the attack. This resulting effect is absent with an event of rushing at someone or something.

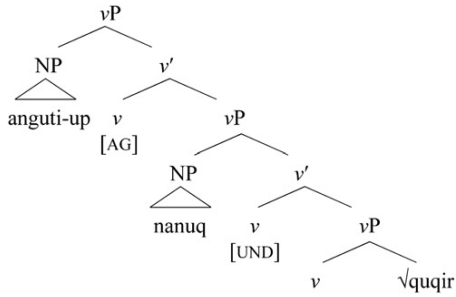
By analyzing the antipassive as a manner verb, we can explain the lack of affectedness of the event upon the object; the verb root supplies the manner only, and it says nothing about a result state. With the ergative, in contrast, the verb root supplies the result state. To make this more concrete, consider the verb *kapi* "stab." Now the verb "stab" is a punctual verb, so we would expect that if it lexicalizes a scale, it will be a two-point property scale; in this case, the two-point scale would encode "not having the property of being stabbed" to "having the property of being stabbed." In the transitive construction, the verb root itself would encode this (two-point) property scale. The internal argument of the verb, *nanuq* "polar bear" would be the undergoer, transitioning along the (two-point) path or scale from "not having the property of being stabbed" to "having the property of being stabbed." At the end of the event, the polar bear would have the property of being stabbed. When we view the sentence in this way, we can see that the sentence will be completive, with an actual effect impinging upon the object. The completiveness of the event and the affected nature of the object is the result of the verb encoding this (two-point) property scale. Furthermore, since having the property of being stabbed sometimes results in a fatality, we can explain Spreng's (2005) observation that in the transitive use of this root, there are "potentially fatal results."

The syntax for such a structure would be as in (18). The categorizing light verb *v* would combine with the verbal root and project as a phrase. In this case, the verbal root would be a complement to the light verb head. I propose here that the complement of the light verb that acts as a verbalizer is always a scale (see also Ramchand, 2008, who proposes that path elements are complements to a process head in her first phase syntax). Here, then, the root will be interpreted as a (two-point) property scale. The verbalizing head plus the scalar element define the basic predicational layer for the sentence.

Next, the participants in the event are added into the structure. I will follow others (Borer, 2005) and consider that the direct object is introduced in the syntax; in this case, I propose that like the external argument, the direct object

is introduced by a functional verbal head that assigns a theta role to its specifier. For the direct object, the theta role will be undergoer (Ramchand, 2008). Thus, the NP *nanuq* "polar bear" will be introduced by a verbal functional head above the predicational layer and assigned the thematic role of undergoer by this head. The NP *anguti-up* "the man" will be introduced by another verbal functional head and assigned the thematic role of agent.

(18)



Following Legate (2008), Aldridge (2012) and others, I consider that the ergative case that appears on the subject is an inherent case assigned by transitive *v* that introduces the external argument. Absolutive case that appears on the object will be assigned by T (Spreng, 2006).

Turning now to the antipassive, the syntax will be a bit different; rather than providing a scalar complement, the verb root gives the manner component for the event introduced by the antipassive head. Since a completive event of stabbing is brought about in a particular way, using particular kinds of motion with the arms and hand, often using a particular kind of instrument (a long, thin object that tapers toward a point), the verb root itself can also describe this particular manner of action. Here, the manner description corresponds best to the English word "poke."[5] Since the verb itself no longer provides a property scale, the event described by the antipassive cannot be one in which the internal argument moves from "not having the property of being stabbed" to "having the property of being stabbed." In other words, the antipassive does not encode an effect upon the object.

Since the verb root no longer supplies a path or scale of change (it gives the manner of the event only), some other element can supply such a scale. In looking at the English translation, we see that in some cases, the contribution of the oblique object is given as a prepositional phrase, with the NP as the object of the PP. For example, in the antipassive sentence in (1), we see the verb

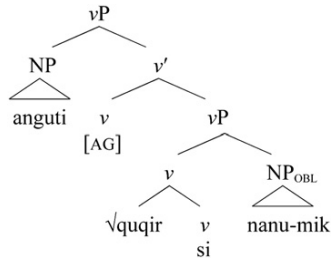
[5]In this way, the verb is much like Levin and Rappaport Hovav's (to appear) characterization of the verb "cut" in English, which can encode manner or result but not both at the same time. They state that "cut" is basically a result verb but it can have a manner interpretation because "it is so strongly associated with a particular way of handling a specific type of instrument." The difference with Inuit is that the root combines with a different light verb in each case.

phrase translated here as "shoot at the polar bear." Here, the oblique NP forms a reference object for a spatial path; the activity of shooting occurs along a path that is oriented toward, but need not culminate at, the NP "polar bear." Similarly, with the antipassive verb "poke," the oblique NP gives the reference object for the path; the poking event proceeds toward the oblique NP. The examples from Bzeduh and Karbadian are different. Rather than providing a spatial path scale, the oblique NP provides an extent scale. In (15), the scale is provided by the area of the field; the activity of plowing continues through the area supplied by the field. With the example from Karbadian (16), it is the surface area of the bone that provides the extent scale.

The syntax for the antipassive construction is slightly different. In this case, the antipassive light verb head merges with the verbal root and projects as a head; in this way, the verb root is adjoined to the antipassive head. Such a root that has been adjoined to the head, rather than acting as a property scale, will be interpreted as a manner component. The oblique NP, as the element providing the path or scale, merges as the complement to the antipassive head.[6] In the example in (19), the oblique noun phrase *nanu-mik* "polar bear" acts as the reference object for a spatial path scale.

As above, the initial verbalizing *v* head (with the adjoined root providing the manner component) plus the scalar element define the basic predicational layer, with arguments added on to this predicational layer by separate verbal functional heads. In this particular case, the NP *anguti* "the man" is added into the syntax by a verbal functional head and assigned the thematic role of agent by this head. The oblique NP receives its case from the *–si* head, while T assigns absolutive case to the subject (Spreng, 2006).

(19)



From this analysis, we see that the verb root has multiple ways of being interpreted depending on its syntactic environment. When combined with a light verb as a complement, it is interpreted as a scale and we get the ergative

[6] In this particular example, the oblique NP does not define the entire path, just the reference object for the path. In this way, it is similar to the English verb "climb" in its transitive use; in this case, the direct object "the tree" gives the reference object for a path interpreted as "up the tree."

(i) The squirrel climbed the tree.

structure. When combined with a different light verb as an adjunct, it is interpreted as a manner component and we get the antipassive structure.[7]

3.2. Manner Verbs and Object Deletion

Note that in this analysis, the verbal root provides a manner description for the event introduced by the antipassive head. Levin and Rappaport Hovav (2010) note a contrast between manner and result verbs in that manner verbs freely allow their object to be missing (20), while result verbs that encode a property scale do not (21).

(20) a. The maid swept today.

b. Cinderella scrubbed all day.

(21) *The maid broke today.

Since the verbal root is functioning as a manner component, we would expect that the antipassive would freely allow its object to be missing. This is indeed the case; one of the hallmarks of the antipassive is that the oblique object need not appear, even with typical change of state verbs. The examples in (22) are from West Greenlandic and Baffin Island dialects of Inuktitut (Schmidt, 2004; Spreng, 2005).

(22) a. Kaali toqut-**si**-voq
Kaali kill-AP-IND.3SG
Kaali is a killer/murderer. (Kaali kills)

b. kapi-**si**-juq
stab-AP-PART.3SG
He is poking someone.

c. aqtug-**si**-juq
touch-AP-PART.3SG
He is stroking someone.

Here, we see the change of state verb "kill" used without an object. Typically, change of state verbs require their direct object to be present. If we consider that in the antipassive construction the root underlying *toqut* "kill" itself functions as a manner component for the antipassive head, rather than providing a property scale, then it is no surprise that the object can be missing; we have created a manner verb and manner verbs allow their object to be missing.

[7]See also Mateu and Acedo-Matellán (2004) for a similar position in which a verb root that is the predicate of a small clause is interpreted as a result state but a verb root that is an adjunct to v is interpreted as manner.

At first, it might appear that these cases of missing objects are no different than the examples in (23), in which we see transitive agreement on the verb and no antipassive marker (Spreng, 2005).

(23) a. kapi-jara
stab-PART.1SG/3SG
I stabbed him.

b. aqtuq-tanga
touch-PART.2SG/1SG
You touched me.

However, there is a difference between these cases and the antipassive cases. With the antipassive, the "missing" internal argument is interpreted as an indefinite "someone." In contrast, the verb with transitive inflection has the object interpreted as a definite pronoun "him" or "me." In this latter case, it appears that we have "pro-drop"; the object isn't syntactically missing but appears as a null pronoun.

3.3. Suffixless Antipassive

Another argument in favor of the manner/path analysis of the antipassive comes from an interesting asymmetry with respect to the appearance of the antipassive suffix. With verbs that are from the creation/consumption class as well as other verbs that have incremental theme objects, we see an alternation between a transitive and antipassive construction, but without any antipassive morphology (Bittner, 1987; Bok-Bennema, 1991; Spreng, 2006), as seen in (24)–(28).

(24) a. anguti-up niqi niri-vaa
man-ERG meat.ABS eat-IND.3SG/3SG
The man is eating meat.

b. anquti niri-vuq niqi-mik
man.ABS eat-IND.3SG meat-OBL
The man is eating meat.

c. anquti niri-juq
man.ABS eat-PART.3SG
The man is eating (something).

(25) a. Jaaku-p illu taa-nna sana-pa-a
Jacob-ERG house.ABS this-SG.ABS built-TR.IND-3SG/3SG
Jacob built/is building/was building a house.

b. Jaaku illu-mik taa-ssuminnga sana-pu-q
Jacob.ABS house-OBL this-SG.OBL build-INTR.IND-3SG
Jacob is building the house.

(26) a. Arna-up japa miqsu-gaa
Woman.ERG parka.ABS sew-PART.3SG/3sg
The woman sews the parka.

b. Arnaq miqsuq-tuq japa-mik
woman.ABS sew-PART.3SG parka-OBL
The woman sews the parka.

(27) a. Jaani-up niqi tamua-jaa
Jaani-ERG meat.ABS chew-PART.3SG/3SG
Jaani chews the meat.

b. Jaani tamua-juq (niqi-mik)
Jaani.ABS chew-PART.3SG meat-OBL
Jaani chews on meat.

(28) anquti uqalimaq-tuq
man.ABS read-PART.3SG
The man is reading something.

As we discussed above, verbs that have incremental theme objects have noun phrase direct objects that can function as extent paths or scales; in this way, they differ from verbs such as "shoot," "stab," "break," and "kill", in which the noun phrase direct object in its basic, transitive use is not a path or scale but an undergoer. These latter verbs do not combine with a noun with *–mik* case without antipassive morphology. If we consider that a *–mik* case noun phrase provides a path or scale, then it would not be surprising that these noun phrases appear with creation/consumption verbs and incremental theme verbs without any antipassive morphology; these verbs take NP extent paths as a complement in their basic use. Verbs such as "shoot," "stab," "break," and "kill", which involve property scales in their basic use, would not be expected to take a *–mik* case noun phrase as a complement, as *-mik* noun phrases are path NPs and cannot be undergoers.

Of course, we now need to explain why the creation/consumption verbs appear with absolutive noun phrases; if the direct objects of such verbs are extent scales, we would expect them to be always marked with an oblique case. However, I think it is also possible for these verbs to get a result interpretation, in which the verb root provides a property scale. In these cases, the direct objects would be undergoers. With the verb "eat," for example, the property scale would be one of being eaten; as the event proceeds, the direct object has more and more of the property of being eaten. The verbal root in this case,

unlike the other verbal roots discussed above, can combine with a null *v* as a complement or as an adjunct, generating the ergative and antipassive construction respectively. Other roots can only combine with a null *v* as a complement and the *–si v* head as an adjunct.[8]

There is some cross-linguistic support for the view that roots underlying creation/consumption verbs can provide either a manner component or a property scale component depending on the syntactic environment. Note that in English, we can add the particle "up" to verbs such as "eat" and "drink."

(29) a. The children eat up their dinner.
b. The children drank up their milk.

It has been noted that when the particle is added to these verbs, the event expressed is more completive than the plain transitive verb (Brinton, 1988; Ramchand, 2008; Tenny, 1994, among others). Viewed in this way, the relationship between the particle verb and its plain counterpart parallels the relationship between the transitive and the antipassive; the former implies a stronger effect on its object than the latter. I propose that the particle verb "eat up" involves a result verb construction, while "eat" involves a manner verb construction.

At first, it seems that the particle verbs "eat up" and "drink up" do indeed encode a manner component, and the completive effects are the result of the presence of a result state that is lacking in the verbs "eat" and "drink"; as a reviewer points out, the verbal part would encode manner, while the particle would encode result. However, there are additional facts about particle verbs that suggest they do not encode manner. Consider the following sentences in (30).

(30) a. The students ate up the interesting material about syntax.
b. #The students ate the interesting material about syntax.

While the sentence with the particle verb (30a) is fine, its plain counterpart (30b) is pragmatically awkward. I argue that the contrast between these two

[8]As a reviewer points out, this particular analysis of suffixless antipassives introduces a complication for the neo-constructionist analysis of the ergative/antipassive alternation given in this paper. The analysis of incremental theme verbs such as "eat" and "drink" conforms closely to a neocontructionist view; if the root combines with a null verbalizer as a complement, we get the ergative, result construction while if the root combines as an adjunct, we get the antipassive, manner construction. The trouble comes with verb roots underlying "stab," "shoot," "kill," etc., which combine with a different verbalizer in the two different cases: with the null verbalizer, the root combines as a complement to give an ergative result construction, while with the *–si* verbalizer, the root combines as an adjunct to give the antipassive manner construction. The question that is relevant at this point is why these latter roots can't combine with a null verbalizer as an adjunct to give a "suffixless" antipassive. The generalization appears to be that basic result verbs combine as an adjunct only with *–si*. Thus, one possibility to capture this generalization is that at spell out, a structure in which a result root is adjoined to a verbalizer, the head of the verbalizer is spelled out as *–si*, although more research is necessary to settle this particular question.

sentences results because the plain verb "eat" is a manner verb, while "eat up" encodes not manner but result. The verb "eat" describes an event of ingesting elements using the mouth and teeth in a particular way. In sentence (30b), the direct object "the material" would then have to be interpreted as being ingested by using the mouth and teeth. However, the verb "eat up" does not encode an event of ingesting material with the mouth and teeth but an event that results in an element being in some sense "internalized"; this state of being internalized is the result that the particle verb encodes. How this result state is achieved will differ depending on the element that is internalized, since "eat up" does not encode manner. Thus, the sentence with the particle verb (30a) is pragmatically appropriate because it does not require that the direct object be ingested with the mouth and teeth, only that the direct object be in some sense "internalized."[9]

There are other tests which show that the particle verb, unlike its plain counterpart, behaves more like a result verb than a manner verb. For example, while the plain verb need not have its internal argument present, the particle verb must.

(31) a. *The children ate/drank up.

b. The children ate/drank.

Recall from above that one characteristic of manner verbs is that they allow for the direct object to be missing. Since the particle verb does not, it is behaving more like a result verb than a manner verb.

Similarly, as discussed in Levin and Rappaport Hovav (2010), manner verbs but not result verbs take non-subcategorized objects. Again, in this respect, the plain verb behaves as a manner verb but the particle verb does not.

(32) a. The moth ate a hole in my sweater.
b. *The moth ate up a hole in my sweater.

[9]Treating this difference between "eat/drink" and "eat up"/"drink up" as a difference between a manner/result verb might also be extended to account for the contrast found in Folli and Harley (2005). As they note, the verb "eat" requires an agentive subject, while the particle verb "eat away" can occur with an agentive as well as a causer subject.

(i) a. Marvin ate an apple.
b. Marvin ate up an apple.
c. #The sea ate the beach.
d. The sea ate away the beach.

The contrast between (ic) and (id) could be explained in a similar fashion to the argument proposed for the contrast in (31a) and (31b). The verb "eat" requires a specific manner of action involving the mouth and teeth, and the causer subject NP "the sea" cannot participate in this type of manner of action. If we consider that the particle verb "eat away" encodes a result only, and no manner, then (id) is fine because it does not force a manner reading in which the subject "the sea" must ingest the beach using a mouth and teeth in a specific way.

(33) a. The fat man ate the buffet.
b. The fat man ate up the buffet.
c. The fat man ate his way through the buffet.
d. *The fat man ate up his way through the buffet.

From this data, it appears that in English, the root √eat when it combines with the particle behaves as a result verb only and it cannot be a manner verb; the verb "eat up" encodes the property scale of "being eaten."[10] Inuit allows us to see that the root in that language is ambiguous. It can combine with a categorizing *v* head either as a complement or an adjunct. When it combines as a complement, the root is interpreted as a property scale and the verb is a result verb (just as the English root when combined with "up" can only be interpreted as a property scale). The direct object is an undergoer and is assigned absolutive case; here we get the ergative structure. When the root combines with the little *v* head as an adjunct, it is interpreted as a manner component and the verb is a manner verb. The oblique NP functions as the extent path complement; here we get the "suffixless" antipassive.

3.4. Challenges to the Manner/Path Analysis

The path analysis of the antipassive is challenged by the grammaticality of antipassive constructions with change of state verbs such as "break" or "kill."

(34) a. Pitta-up anautaq surak-taa
Peter-ERG stick.ABS break-part.3SG/3SG
Peter broke the stick.

b. Pitta surak-**si**-juq anautar-mik
Peter.ABS break-AP-PART.3SG stick-OBL
Peter broke the stick.

Typically, these changes of state verbs are thought to provide a property scale, with the internal argument being an undergoer. It is hard to see in the following example how the NP "the stick" functions as a path. While these verbs in their antipassive form certainly do call into question the path analysis, there is evidence from other languages which does suggest that even with these types of verb, a manner/scalar analysis is on the right track.

[10]It is interesting to note here that in this analysis, it is a preposition-like element (the particle) that takes a root such as √eat, which basically encodes non-scalar change (manner), and turns it into one that encodes a scalar change (result). Prepositions themselves form the prototypical scalar element — the spatial path scale. We can think of the preposition as taking a root that does not encode any sort of order and imposes one, allowing for the formation of a scale with its ordered set of degrees, etc. In this way, we can begin to understand why verbal particles are chosen from the class of prepositions, and why particle verbs then have the properties they do.

First, in some languages, change of state verbs do not form the antipassive. In example (14) from Chamorro, we have seen that the verb "kick" can appear in the antipassive, but the change of state verb "kill" cannot (Cooreman, 1994).

(35) a. Ha-puno' si Juan i babui
ERG.3SG-kill UNM John the pig
John killed the pig.

b. *Mamuno' si Juan ni babui
AP.kill UNM John OBL pig
John killed the pig.

This would not be unexpected in the analysis here, since this analysis posits that in the antipassive, the verbal element specifies a manner and the oblique NP provides the reference object for a path or scale. Change of state verbs typically do not encode a manner component, and it is hard to see how the NP can give a path.

In certain cases, a change of state verb such as "break" can occur in the antipassive, but it often takes on a specialized meaning. Gerdts and Hukari (2006) discuss the antipassive suffix *-els* in Halkomelem.

(36) a. naʔət qʷəs-t-əs tᶿə ƛ̓eɬəm̓ sce:ɬtən.
AUX go.in.water-TR-3ERG DET salted salmon
She put the salted fish in water.

b. naʔət qʷs-els ʔə tᶿə ƛ̓eɬəm̓ sce:ɬtən.
AUX go.in.water-ACT obl DET salted salmon
She soaked the salted fish.

They discuss this antipassive suffix as an "activity" suffix that emphasizes the action. Importantly, "the event is often a job like activity that takes time and effort. Sometimes the agent is playing a role in a social situation. He/she is the delegated doer of the event. For many forms . . . certain patients are evoked even when they are not expressed. The patient is fully understood from the cultural context of the activity."

What is interesting in the context of the present discussion is that the verb "break" with this activity suffix *–els* takes on one of these specialized meanings based on the cultural context of the activity.

(37) yəkʷ-əls 'break' [when breaking old plates in ceremony for black faces]

Here, the antipassive verb doesn't focus on the result of an action of breaking but a process of breaking involving a certain instrument (old plates) done for a specific purpose. Here, "break" is used as a manner verb and evokes a particular activity of breaking done with a specific item for a specific purpose. It is behaving more like a manner verb than a result verb; the verbal root is not

encoding a property scale but encoding a particular kind of action associated with breaking old plates for a particular ceremony.

Another example of a change in meaning comes from a different antipassive suffix, *-m*, in Halkomelem Salish (Gerdts & Hukari, 2006). This suffix can attach to verbs such as "break" or "tear."

(38) pq^{w}a-t 'break it' pq^{w}-eʔəm 'break some off'
sq̓e-t 'tear it' sq̓- eʔəm 'tear off a piece'

Note that the translation changes from the transitive to the antipassive. Given this translation, it is clear that the antipassive does not necessarily involve a change of state. For example, if I tear off a piece of paper from my notepad, I have not torn the paper at all; the notion of "tearing" here describes the manner by which I have obtained the piece of paper. In fact, an event of "tearing off a piece" describes more accurately as involving the creation of some object rather than a change of state of some object. So, if I tear off a piece of meat, I haven't really torn that piece of meat but I have created that piece of meat by the action of tearing it from something. Even in English, the verb which is the translation of the antipassive has more in common with verbs of creation than with change of state verbs. Verbs of creation can appear in the benefactive double object, while change of state verbs cannot; as we discussed above, the objects of verbs of creation are extent scales. What is interesting is that the verbs "break off" and "tear off" can appear more easily in the benefactive double object construction.

(39) I built them a house/cooked them a meal/sewed them a blanket.

(40) a. ??I broke them a piece of candy.
b. I broke them off a piece of candy.

We can see a similar type of situation in the following example from Chukchee (Kozinsky et al., 1988). In (41), the verb "break" occurs in the antipassive, but there is a difference in how the oblique object is integrated into the event and what aspects of the event are focused on as compared to the corresponding ergative. Consider the following mini-dialogue.

(41) a.

ʔəttʔə=čg=ən	tətl=ək	qača	gotətwa=
dog=big=ABS	door=LOC	near, beside	tie(d), tether(ed)=
lʔ=ən,	Pənakwəŋ=qača=gtə	nə = tegyeŋ = qin	Qənwer
PART=ABS	P.=side=DAT	IMPERF=wish=3SG	at last
ʔəttə=ən	**ine=nlepʔet=gʔi**	[gutilg=e]	ənkʔam
dog = ABS	AP = tear = 3SG/AOR	tether = INSTR	and
Pənakwə = nw = etə	ekwet = gʔi		
P. = place = DAT	set out = 3SG/AOR		

The huge dog tethered at the door was longing for Pynakwyng. Finally it broke loose (lit.: broke the tether) and ran there.

b.	. . . Qənwer	ʔəttə = e	rələpʔen = nin	gutilg = ən . . .
	'. . . Finally	the dog = ERG	broke = 3SG/3SG/AOR	the tether = ABS.'

The underlined clause in (41a) contains an antipassive construction (the verb in the antipassive is given in bold), while the (b) example contains a transitive construction. In the underlined clause in (41a), "the tether" is in the instrumental case, an oblique case, and the subject is in the absolutive case, as it would be with prototypical intransitive verbs. In (41b), "the tether" is in the absolutive case, a structural case, and the subject is in the ergative case, as it would be with prototypical transitive verbs.

Kozinsky et al. (1988) note that there is a distinct difference between the use of the antipassive in this mini-dialogue and the use of the transitive verb.

> Though both variants are principally possible, the substitution of [41b] [TRANS] for [41a] loosens somewhat the coherence of the ongoing discourse. Indeed, *it is the subsequent change in the dog's state that the passage is about* (the dog is tethered, *breaks free* and rushes away). Only in breaking the tether does the dog get free. *However, [41b] contains the assertion like 'the state of the tether has changed'*; this switching the listener's attention from the dog's state to that of the tether (the assertion is grammaticalized by putting *gutilq = ən* 'tether' in DO position). Hence the listener would wait for a continuation of the tale about the transformation of the notorious tether or would expect something to the effect of " . . . the dog broke the tether but stayed in its place, in spite of getting free" (pp. 677–678; italics mine).

This mini-dialogue shows that the oblique marked noun phrase is actually a path. Notice in the discussion above that the authors point out that the use of the antipassive is more coherent because the passage is about the change in the dog's state; in other words, the dog here would be an undergoer. Furthermore, note that the authors translate the antipassive verb as *breaks loose*. If we take the English translation as a guide, the verb "break" here is not used in its usual sense; the dog isn't becoming broken, but loose. Here, the verb itself doesn't name the scale (the two-point scale involving "broken"); it is the adjective "loose" which provides the (two-point) scale. The verb "break" provides the manner by which the dog becomes free. If we think of the antipassive along these lines, then the oblique noun phrase "the tether" is not undergoing the change of state. Furthermore, we can think of the oblique noun phrase again as supplying a path, with the noun phrase itself giving the reference object for the path that the dog travels. Here, the dog is traveling a path that involves going away from the tether. Perhaps a better translation would not be "the dog broke/tore loose" but "the dog broke/tore away from the tether."

In addition, the authors note that with the transitive, ergative construction, there is an assertion about the change in the tether; it is the tether that is the undergoer. Here, we have the more typical meaning of the verb, with the verb

itself providing the (two-point) scale of being broken. The absolutive argument "the tether" does not provide a path but itself is the element that undergoes the change of state.

Now, even in English, we can find change of state verbs in constructions in which the verb itself does not encode the property scale. Consider the following sentence.

(42) The dog broke/tore free/loose.

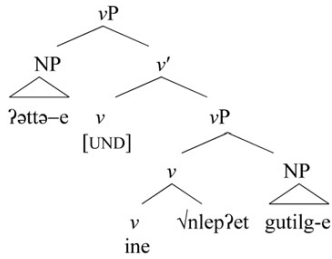
In this sentence, "the dog" is an undergoer, but it does not become "broken" or "torn." In fact, it is the AdjP "free" or "loose" that provides the scale; the dog becomes "free" or "loose." We can even see such change of state verbs with path PPs.

(43) a. The burglars broke into the house.
b. The enemy smashed through the gates.
c. My toe tore through my sneaker.

In each of these cases, the subject NP does not become "broken," "smashed," or "torn"; here, the subject NP follows the spatial path "into the house," "through the gates," or "through my sneaker." The verb itself encodes the manner by which this change of location happens; if anything, it is the object of the preposition that undergoes the change.

The syntax that I propose for the antipassive is as follows.

(44)

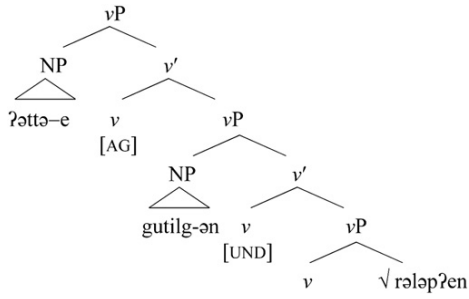


In (44), the oblique NP *gutilg-e* "tether" occurs as the complement to the light verb headed by the antipassive morpheme *-ine*. The root *nlepʔet* "tear/beak" adjoins to the light verb and functions as the manner component. The oblique NP forms the reference object of a spatial path; the path here will be the set of points away from the NP "the tether." The absolutive NP *ʔəttə-ən* "dog" is introduced in the specifier of the verbal functional head that assigns the undergoer a thematic role. This NP will travel along the spatial path scale away from the tether.

By introducing the absolutive NP in the specifier of the undergoer head, we can account for the observation that the antipassive focuses on the change in the dog's state; here, "the dog" is in the typical position in which NPs undergo a change of state.

The syntax for the ergative structure is given in (45).

(45)



In (45), the light verb combines with the root and projects as a phrase. As a complement, the root will be interpreted as a two-point property scale. The absolutive NP *gutilg*-ən "the tether" appears in the specifier of the undergoer head; it is the element that (metaphorically) travels the two-point property scale from "not being broken" to "being broken." In this way, we can also account for the fact that the ergative sentence focuses on the change of state of the tether, as discussed above.

While the scalar analysis can provide a satisfactory explanation for the above example from Chukchee, it is still hard to see how it can provide an explanation for the example from Inuit, which involves the breaking of a stick.

(46) Pitta surak-**si**-juq anautar-mik
Peter.ABS break-AP-PART.3SG stick-OBL
Peter broke the stick.

However, Spreng (p.c.) reports that these antipassive constructions with punctual verbs often get an "about to" reading, or a "slow motion" reading in which the entire event appears to be stretched out. So, if Peter is holding a stick, and bending this stick, and the stick is about to break but has not yet broken, the antipassive construction is used to describe this situation.

In this light, recall the above antipassive with the verb "shoot." With "shoot," we considered that there was a process of shooting that is directed toward the oblique noun phrase. There is no undergoer in these particular cases. We can extend this analysis for "shoot" to the verb "break." In the example with "break," we have a process that is directed toward the oblique noun phrase, in this case "the stick." Like the oblique noun phrase for "shoot," the oblique noun phrase with "break" is what the process is directed towards.

The difference between "shoot" and "break" is that the process associated with shooting has a particular characteristic action associated with it involving a particular instrument, but this is not the case for "break"— there are many kinds of processes that can be associated with break. When adjoined to the antipassive morpheme, the verb "break" is understood as an action that could lead to something being broken. There are many such actions that fulfill this requirement.

4. THE INCHOATIVE

With the analysis of the antipassive in place, the analysis of the inchoative is not as complex. Recall again the basic analysis of the morpheme *–si* from the antipassive: this morpheme is a verbal head that introduces an event and that takes as its complement a scalar element. The oblique NP provides the scalar element, with the verbal root giving the manner. Considering the meaning of the inchoative, the verbal element in this construction clearly does not give the manner component, so we cannot simply extend the analysis of the verb from the antipassive to the inchoative. However, it is also clear that the verbal element in the inchoative gives the result state achieved. Looking at the inchoative from the perspective of a scalar analysis, the verbal element will provide a (multi-valued) property scale that gives the result. If this is on the right track, and considering the analysis of the morpheme *–si* given for the antipassive, we can see now how to extend that analysis to the use of *–si* in the inchoative. As in the antipassive, the morpheme will be the head of a light verb that provides the event. However, rather than the nominal element providing the scalar element, it is the verb that provides the scale. As the scale, the verb is the complement to the morpheme *–si*. Since there is no manner element of meaning, there is no element adjoined to *–si*.

Consider now the example of the inchoative given above, *piqqis-si* "get healthy," repeated here as (47b). The verb here provides a multi-valued property scale, since in this case, there are many degrees of "healthy." There is no expression of the manner in which the children become healthy.

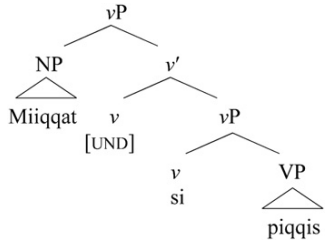
(47) Inuit (Bittner & Hale, 1996)

a. Miiqqat piqqip-p-u-t
children healthy-IND-[-TR]-3PL
The children are healthy.

b. Miiqqat piqqis-**si**-pp-u-t
children healthy-AP-IND-[-TR]-3PL
The children are getting well.

The syntax for the inchoative is as follows (48).

(48)



In (48), the intransitive VP is the complement to the light verb *–si*, providing the scale. There is no element adjoined to the morpheme *–si*, since there is no manner component. The absolutive argument is projected in the specifier of the light verb that introduces the undergoer thematic role.

What is interesting is that the antipassive marker can combine with a process verb such as "walk" and give it an "inceptive" reading, as seen in example (49).[11]

(49) a. Pitta pisuk-tuq
Peter.ABS walk-PART.3SG
Peter is walking.

b. Pitta pisu-si-juq
Peter.ABS walk-AP-PART.3sg
Peter starts to walk.

We can extend the analysis given for (47)–(49); here, it will be the VP headed by "walk" which provides the scalar structure. But the VP headed by "walk" cannot give a complex scalar structure like the VP headed by "healthy," in which there are intermediate degrees; someone or something either has the property of walking or doesn't. Suppose that in this case, the eventive VP is in a syntactic position where it is "coerced" into supplying a scale. But when we try to give a scale for an eventive VP such as "walk," we can only get a two-point scale (not having the property of walking to having the property of walking). This two-point scale will then be mapped into the event itself, giving an event which transitions from "not walking" to "walking." With this two-point scale, we get the inceptive reading. The NP "Peter" is the undergoer who (metaphorically) travels the path or scale from "not walking" to "walking."

5. ADDING ARGUMENTS IN THE ANTIPASSIVE

In syntactic structures that I gave above, I posited that the undergoer direct object is added by a verbal functional head, just as the agent argument. As such, I am treating the undergoer direct object much like a benefactive/malefactive argument in languages with applicative constructions, since recent analyses of such constructions invoke an applicative head that introduces the benefactive/malefactive argument (Pylkkänen, 2008). The idea that the undergoer argument is added syntactically is motivated by the following examples (50) from Chukchee (Kozinsky et al., 1988; Spencer, 1995).

[11] Spreng (2006) argues that this is different from the antipassive morpheme, in that the inceptive *-si*, but not the antipassive morpheme, deletes the preceding consonant of the verb root. However, Johns (2006) argues that it is the same morpheme in each case, but attached at different places. We could incorporate this proposal here by saying that when *–si* combines with the root, it is the antipassive morpheme, while when it combines with a VP, it is the inchoative or inceptive morpheme.

(50) a. ətləg-e təkeč?-ən utkuč?-ək pela-nen
father-ERG bait-ABS trap-LOC leave-3SG/3SG

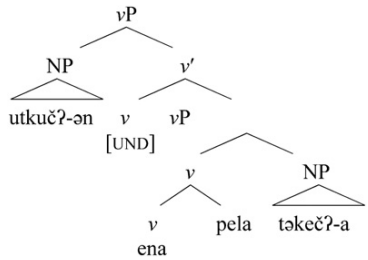
b. ətləg-en təkeč?-a utkuč?-ək ena-pela-g?e
father-ABS bait-INS trap-LOC AP-leave-3SG

c. ətləg-e təkeč?-a utkuč?-ən ena-pela-nen
father-ERG bait-INS trap-ABS AP-leave-3SG/3SG
The father left the bait by the trap.

In example (50a), we see a transitive structure in which "bait" is the undergoer expressed as the absolutive argument, with "the trap" as an oblique adjunct. In (50b), the antipassive morpheme *ena* has been prefixed to the verb. The verb shows intransitive agreement with the subject only and the original undergoer appears as an oblique. In (50c), the NP "trap" seems to have been promoted to become the absolutive argument, with the verb now showing transitive agreement even though it still appears with the antipassive marker.

I analyze the antipassive sentence in (50c) as in (51).

(51)



In (51), the root combines with the antipassive affix *ena-* and the oblique NP "bait" can be understood to function as an incremental theme extent scale (the event is being measured out by the "amount" of bait being left). The NP "trap" is introduced by a light verb head that assigns the undergoer role. In a sense, we can understand this sentence as the trap being affected by (undergoing) the action of the bait being left in it, similar to the English sentence "I left the trap with bait."[12]

[12]It is interesting to see here that in the translation I provide, the scalar element is introduced by the preposition "with." This preposition also introduces instruments in English, as in (i).

(i) We cut the skin with a knife.

Now, as seen in the glosses in (50), the oblique element in Chukchee which I argue to be a scale is also given instrumental case marking. And, as discussed in Bok-Bennema (1991), the *–mik* case of the antipassive object in Inuit also introduces instruments.

(ii) savi-mi-nik kapi-vaa
knife-his-OBL stab-IND.3SG03SG
He stabbed it with his knife.

Thus, there is a close connection between instrumental case and scalar elements cross-linguistically.

A possible alternative analysis for (50c) is that the trap is still a locative argument and that this sentence is derived by incorporating a null preposition into the verb, allowing the NP to appear as the direct object, or even that there is a locative applicative head that introduces this argument. However, these analyses cannot be maintained because this sentence does not mean the same as (50a), in which the NP "bait" does appear with locative morphology. Kozinsky et al. (1988) state that the two sentences are not synonymous. With the first, the assertion is that the bait has simply changed location. However, with (50c), a stronger statement is made; the trap is now "ready for operation" because the bait has been put into the trap; the trap clearly has undergone a change of state, and is now an undergoer.

Note that we can see a similar promotion of a benefactive argument to absolutive in the antipassive as well.

(52) a. ətləg-e akka-gtə qora-ŋə təm-nen
father-ERG son-DAT deer-ABS kill-3SG/3SG
'The father killed the reindeer for the son.'

b. ət1əg-e ekək ena-nmə-nen qora-ta
father-ERG son-ABS AP-kill-3SG/3SG deer-INSTR
The father killed the reindeer for the son.

In (52a), we have an ergative structure in which the direct object undergoer "the deer" is in the absolutive case and the benefactive argument is introduced as a dative. In (52b), however, we have an antipassive structure in which "the deer" appears in an oblique case, and the benefactive argument appears as an absolutive. Since the undergoer argument in (50) is behaving similarly to the benefactive argument in (52), and many recent studies consider that the benefactive is introduced by a separate functional projection, I will assimilate the syntax of the undergoer to that of the benefactive, and consider that like the benefactive, the undergoer is introduced by a separate verbal functional head.

6. CONCLUSION

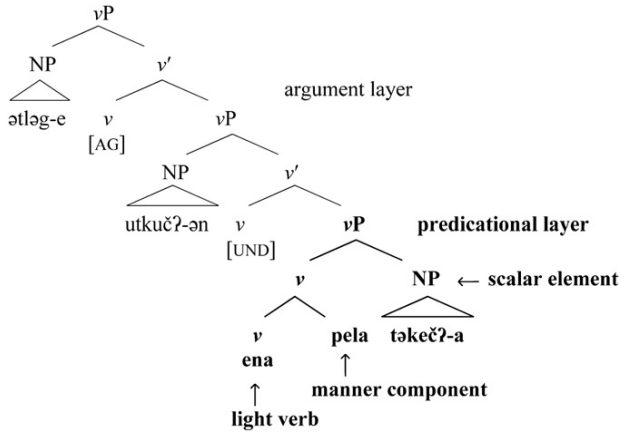
The notion of scalar structure unifies apparently distinct uses of the antipassive morpheme, as well as explaining the syntactic and semantic differences between the ergative and antipassive constructions. The morpheme *–si* is an eventive head which takes a scalar element as its complement. In the antipassive, the morpheme *–si* takes an oblique NP that provides a scale, while in the inchoative this same morpheme takes an intransitive stative verb that provides a property scale.

In this light, we see that some apparent instances of grammatical function changing involve a change in the scalar structure of the clause. The ergative/antipassive distinction is not simply a matter of changing the valency of a verb

from a transitive to intransitive but also changing the scalar structure of the clause. With the ergative, the absolutive NP is an undergoer, and the verb root provides a property scale. With the antipassive, the oblique NP forms a scalar element (or a reference object for a scale), and the verb root functions as a manner component.

This analysis suggests a model of syntactic structure in which the innermost *v*P builds up the predicational element. This predicational element consists of a light verb, a manner component adjoined to the light verb (if present), and a scalar component as a complement to this light verb (if present). Agents, undergoers, and applicative elements such as benefactives/malefactives are the true arguments of the clause, and they are added by separate verbal functional heads on top of this predicational element.

(53) ətləg-e təkeč?-a utkuč?-ən ena-pela-nen
father-ERG bait-INS trap-ABS AP-leave-3SG/3SG
The father left the bait by the trap.



In the larger picture, the polyfunctionality of the antipassive morpheme displayed here is also seen in other languages, where we see morphological syncretism of markers for a number of valency reducing constructions, such as the antipassive, anticausative, and reflexive, among others. This kind of marking is often referred to as the middle voice. The analysis of the polyfunctionality of the *–si* morpheme given here, which appeals to the scalar structure of the clause, suggests a new line of research for further explorations into the nature of middle marking in general.

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5

SOME STRUCTURAL ANALOGIES BETWEEN EXISTENTIAL INTERPRETATION AND TELICITY

E. Matthew Husband

ABSTRACT

This chapter examines the effect of objects on the interpretation of states and events and explores the consequences of these effects for a theory of aktionsart. This work gathers together observations concerning the behavior of the availability of an existential interpretation for a stative subject and the emergence of a telic interpretation of an event and offers a unified analysis of these two phenomena. The availability of an existential interpretation for a stative subject and the emergence of a telic interpretation of an event show remarkably parallel behavior in terms of the effects their objects have on them. It is further argued that an object's quantization, which is known to play a prominent role in the analysis of the telicity of events, also plays a prominent role in the licensing of an existential interpretation for subjects in states. This analysis of events and

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states points toward the possibility of a more unified theory of aktionsart in which quantization plays a central role in the lives of both events and states.

Keywords: Existential interpretation of subjects, quantization, strong/weak distinction, telicity

1. INTRODUCTION

That objects affect the interpretation of events has been well known since at least Verkuyl (1972). He observed that the telicity of an event depends on properties of its object. Using now classic tests set out in detail by Dowty (1979), a telic interpretation is shown to be available in (1a) but not in (1b), where the acceptability of *in x time* indicates the presence of a telic interpretation.

(1) a. The student solved these problems in an hour.
b. The student solved problems *in an hour.

A similar observation concerning the interpretation of states was made by Fernald (1994) who noted that the interpretation of a bare plural subject depends on the properties of its object. An existential interpretation of a bare plural subject is available in (2a) but not in (2b). The availability of an existential interpretation of a bare plural subject is one hallmark of the distinction between stage-level and individual-level predicates (Carlson, 1977; Kratzer, 1995), a distinction found within states (Fernald, 2000; Mittwoch, 2007).

(2) a. Tycoons own this bank. (existential possible)
b. Tycoons own banks. (generic only)

This chapter pulls together several observations of parallel behavior between the availability of existential interpretation and telicity, restricting the focus to the role objects play in licensing existential interpretation in states and telicity in events. Section 2 reviews the effects of objects on events and states. Section 3 presents an event composition and information structure account of the effects of objects and presents evidence against information structure accounts. Section 4 discusses an event composition account of the effects of objects and some of its consequences for the interpretation of events and states. Finally, Section 5 summarizes and concludes the chapter.

2. ESTABLISHING THE EFFECTS OF OBJECTS

2.1. Transitivity

Part of the variable behavior of events and states comes from transitivity alternations. For events, the addition of a direct object can alter their telicity (for an overview, see Rosen, 1999). In the presence of an object, a verb like *read* can receive a telic interpretation, as in (3a). Without an object, however, this same verb fails to receive a telic interpretation, as in (3b).

(3) a. John read the book in five minutes.
b. John read *in five minutes.

Transitivity also affects certain interpretations related to states (Carlson, 1989). When a verb like *understand* has an object, an existential interpretation of its subject is available, as in (4a). Without its object, however, the subject fails to receive an existential interpretation, as in (4b).

(4) a. Students understand this homework. (existential possible)
b. Students understand. (generic only)

2.2. Structure of Objects

A more surprising observation is that presence of an object is not enough to guarantee the availability of a telic interpretation for events or an existential interpretation for states. Properties of the object also play an important role.

2.2.1. Type of Object

While Garey (1957) and Allen (1966) represent early examples of this observation for events, Verkuyl (1972) laid the ground work for a now rich literature on the type of objects which license a telic interpretation. Repeating and expanding from (1a) in the introduction, Verkuyl noted that objects having a specified quantity license a telic interpretation, as in (5). Those without a specified quantity fail to license a telic interpretation, as in (6).

(5) a. The students solved these problems in an hour.
b. John built a house in six months.
c. The teacher ate several apples in three hours.

(6) a. The students solved problems *in an hour.
b. John built houses *in six months.
c. The teacher ate apples *in three hours.

Fernald (1994, 2000) made a similar observation for states. Repeating and expanding from (1b) in the introduction, Fernald observed that a definite/

specific object licenses an existential interpretation of their subject, as in (7a), while an indefinite/nonspecific object fails to do so, as in (8a).[1] Note that this effect extends to weak subjects in general. Bare numerals (and weak quantifiers) refer to a cardinal existentially or partitive interpretation. (7b) can mean that there are three children who like these stories; whereas (8b) can only mean that three out of all the children like these stories. Likewise, the singular indefinite can refer to an individual existentially or a kind. (7c) can mean that there is a box which contains these marbles; whereas (8c) can only mean that boxes contain marbles as a kind.

(7) a. Tycoons own this bank. (existential possible)
b. Three children like these stories. (cardinal possible)
c. A box contains these marbles. (individual possible)

(8) a. Tycoons own banks. (generic only)
b. Three children like stories. (partitive only)
c. A box contains marbles. (kind only)

A natural question to ask then is whether the types of objects which license telic interpretations in events are the same as those which license an existential interpretation in states. I will return to this in Section 3.3.1.

2.2.2. Particles

Verkuyl (1972) also discussed the effect certain particles had on the telicity of an event. He noted that the presence of optional particles like *from* and *at*, given in (9a) and (9b) block a quantized object from licensing a telic interpretation, as seen in their contrast from (10).[2]

(9) a. Robby ate from two sandwiches *in an hour.
b. Robby ate at this sandwich *in an hour.

(10) a. Robby ate two sandwiches in an hour.
b. Robby ate this sandwich in an hour.

[1] Fernald (1994) discussed the different between (7) and (8) as a definiteness effect, while Fernald (2000) called it a specificity effect. In both cases it is unclear what the proper range of nominal types is, as the effect is only discussed with respect to demonstrative versus bare plural objects. I return to this point in more detail in Section 3.3.1.

[2] Verkuyl (1972) also noted that optional particles like *up* license a telic interpretation. In the presence of these particles, an object is required and it must be quantized (de Hoop, 1996).

(i) a. Jane drank up the wine (in ten minutes).
b. *Jane drank up wine (in ten minutes).
c. *Jane drank up (in ten minutes).

While optional particles are infrequent in states, there are a few stative verbs which may optionally have a particle. The verb *believe*, for instance, may optionally appear with the particle *in*, as in (11). Similar to the effect of particles on event interpretation, the presence of this particle can have an effect on the object's ability to license existential interpretation, as shown in (11). For some speakers, the availability of existential interpretation is weakened when the particle is present even though the object is a demonstrative.[3]

(11) a. Linguists believe in this theory about syntax. (%existential possible)
b. Linguists believe this theory about syntax. (existential possible)

It should be noted that obligatory particles show a different pattern of behavior. Eventive verbs like *look* and *figure*, for instance, require a particle to license an object. Unlike the optional particles in (9), these particles do not interfere with the object's effect on telicity. A quantized object introduced by an obligatory particle still licenses a telic interpretation, as in (12), and a bare plural object introduced by an obligatory particle still fails to do so, as in (13).

(12) a. John looked at the painting in an hour.
b. John figured out the puzzle in an hour.

(13) a. John looked at paintings *in an hour.
b. John figured out puzzles *in an hour.

Stative verbs often require a particle to license an object. Similar to the obligatory particles for eventive verb, obligatory particles for stative verbs do not interfere with the object's effect on the availability of existential interpretation. The pair for *live in* comes from Fernald (1994), to which I add *belong to* and *depend on*. The demonstrative object introduced by an obligatory particle licenses an existential interpretation, as seen in (14), and the bare plural object introduced by an obligatory particle fails to do so, as in (15).

(14) a. Monkeys live in these trees. (existential possible)
b. Students belong to this club. (existential possible)
c. Laws depend on this election. (existential possible)

(15) a. Monkeys live in trees. (generic only)
b. Students belong to clubs. (generic only)
c. Laws depend on elections. (generic only)

These findings suggest that the syntactic relationship of the object to the predicate plays an important role in determining telicity and existential interpretation.

[3]The % indicates a split judgment among speakers. This particular split in judgments here may have to do with whether the particle *in* functions like the particles in (9) or like (12) and (14).

2.2.3. Case

Turning away from English briefly, there has been a long standing observation that telicity in morphologically rich languages like Finnish is tightly related to the case on the object. As indicated by the glosses, an event receives a telic interpretation when the object is in accusative case, as in (16a), and an atelic interpretation when the object is in the partitive case, as in (16b) (Kiparsky, 1998).

(16) a. Ammu-i-n karhu-n / kaksi karhu-a / karhu-t.
shoot-PST-1SG bear-ACC / two-ACC bear-PRT / bear-PL.ACC
'I shot the (a) bear/two bears/the bears.'

b. Ammu-i-n karhu-a / kah-ta karhu-a / karhu-j-a.
shoot-PST-1SG bear-PRT / two-PRT bear-PRT / bear-PL-PRT
'I shot at the (a) bear/at (the) two bears/at (the) bears.'

The alternation of accusative/partitive case also extends into states. Although stative verbs generally assign partitive case to their object, Kiparsky (2005) notes a set of Finnish stative verbs given in (17) which allow for accusative case.

(17) *omistaa*, *omata* 'own', *sisältää* 'contain', *käsittää* 'comprise', *muistaa* 'remember', *tietää* 'know' ('savoir'), *tuntea* 'know' ('connaître'), *ymmärtää* 'understand' (something), *myöntää* 'acknowledge', *katsoa* 'regard, consider', *uskoa*, 'believe' (something)

As noted by the judgments, a subject can receive an existential interpretation when its object is assigned accusative case, as in (18a), but fails to receive an existential interpretation when its object is assigned partitive case, as in (18b).[4]

(18) a. Tycoonsit omistaa pankit. (existential possible)
Tycoons own banks.ACC
'Tycoons own these banks.'

b. Tycoonsit omistaa pankkeja. (generic only)
Tycoons own banks.PRT
'Tycoons own banks.'

Together, the observations about transitivity, object type, particles, and object case all point to a tight relationship between state and event interpretation. Properties of the object, its presence, type, syntactic context, and case assignment, affect both the availability of existential interpretation and telicity.

[4]Kiparsky (2005) argues that bounded predicates, not just telic predicates, assign accusative case to their objects. The relationship between boundedness, existential interpretation, and telicity will be explored briefly in Section 4.2.

3. THEORIES

Although at first brush a nice parallel appears to exist between the conditions for existential interpretation and telicity, accounts of these two phenomena have been made on different factors. Theories for the interpretation of events have argued for a compositional analysis mapping the part structure of the object to the event. Theories for the interpretation of states have looked to information structural constraints concerning situatedness and topicality. As we will see, these differences are largely due to certain assumptions about the types of objects which are thought to license telicity on the one hand and existential interpretation on the other.

3.1. Event Composition

Most theories account for the availability of a telic interpretation in events through composition of the verb and its object. These event composition theories argue that a distinction between quantized and homogeneous objects plays a key role in determining the telicity of an event (Borer, 2005a, 2005b; Kiparsky, 1998; Krifka, 1989, 1992, 1998; Verkuyl, 1993). Quantized objects yield telic events and homogeneous objects yield atelic events. Borer (2005a, 2005b) proposed recent definitions for quantized and homogeneous given in (19).[5]

(19) a. *Quantized*: P is *quantized* iff P is not *homogeneous*.
b. *Homogeneous*: P is *homogeneous* iff P is *cumulative* and *divisive*.

i. P is *cumulative* iff $\forall x, y[P(x) \ \& \ P(y) \rightarrow P(x \cup y)]$
P is *cumulative* iff for all x and y with property P, the union of x and y also has property P.

ii. P is *divisive* iff $\forall x[P(x) \rightarrow \exists y[P(y) \ \& \ y < x] \ \& \ \forall x, y[P(x) \ \& \ P(y) \ \& \ y < x \rightarrow P(x-y)]]$
P is *divisive* iff for all x with property P there is a proper part y of x which also has property P, and for all x and y with property P if y is a proper part of x then the subtraction of y from x also has property P.

By these definitions, a DP like *three apples* is quantized. It fails to be cumulative because taking an object which is referred to as *three apples* together with another object referred to as *three apples* does not yield something referred to as *three apples*. It also fails to be divisive because there is no proper part of an object referred to as *three apples* that is itself something referred to as *three apples*. A DP like *apples*, however, is homogeneous. It is cumulative because

[5]Borer uses the term quantity both to refer to the quantized/homogeneous distinction and to refer to those phrases which are quantized. In this chapter I will use the term quantization to refer to the quantized/homogeneous distinction and quantized to refer to those phrases which are quantized, as these terms are more standard in the literature.

taking an object which is referred to as *apples* together with another object referred to as *apples* yields something referred to as *apples*. It is also divisive because there are proper parts of an object referred to as *apples* which are also referred to as *apples*, and its removal from the initial object still leaves an object referred to as *apples*.

The quantization of the object is then carried over to the event by a mapping function. Kratzer (2004), for instance, proposes that this mapping from objects to events is accomplished by the meaning of accusative case, given in (20).[6,7] This meaning for accusative case does two things. The first conjunct establishes the relationship between the meaning of the verb and its object. The second conjunct introduces a version of Krifka's (1998) mapping to events. This mapping asserts that for every subpart of the object, there is a subevent and that the relation of the verb holds between them. This derives a quantized event given a quantized object and a homogeneous event given a homogeneous object. Quantized events, in turn, are interpreted as telic, while homogeneous events are interpreted as atelic.

(20) $[\![\text{ACC}]\!] = \lambda R_{\langle e,\langle s,t\rangle\rangle}\lambda x\lambda e[R(x)(e)\ \&\ \underbrace{\forall x'[x' \leq x \rightarrow \exists e'[e' \leq e\ \&\ R(x')(e')]]}_{\text{Mapping to Events}}]$

3.2. Information Structure

Most theories accounting for the effects of objects on the interpretation of states have focused on the configuration of information structure. Here I review two different theories which have analyzed the effects of objects on the licensing of existential interpretation.

3.2.1. Situated Discourse

Glasbey (1997) focuses on discourse properties to account for the alternation of existential interpretation. She argues that existential interpretation arises from a situating effect of certain contexts. One way to create a situating effect is to use a predicate which must be related to a situation. This relation to a situation then licenses an existential inference for the subject — since the predicate is situated at a particular time and location, existence for its subject is inferred.

Concerning the effects of objects on states specifically, Glasbey (1997) argues that demonstrative objects must be related to a situation, thereby creating a situating effect and licensing existential interpretation. While

[6]Semantic types: individuals, e; eventualities, s; and propositions, t. Variables: over individuals, x and y; over eventualities, e for events and s for states. Compositional operations: Function Application and Predicate Abstraction.

[7]For clarity of exposition, I suppress Kratzer's measure f, which is intended to map parts of objects to a range of measure functions.

Glasbey does not fully specify the kinds of objects which require situations, it seems that the weak/strong distinction should play a critical role. First, Glasbey notes that her notion of situatedness is similar to Fernald's (1994) ideas of definiteness/specificity in object effects. Second, since strong DPs are always presupposed, their referents already exist and should require a specific, and arguably situated, context. Since weak DPs introduce new referents and are not presupposed, thus they do not already exist and do not require a specific/situated context. Thus strong DPs are likely candidates for the kind of objects which create a situating effect.[8]

3.2.2. Requiring Topics

Another set of information structure analyses centers around the constraint that every clause is required to have a topic (Jäger, 2001; Lee, 1996). Kratzer and Selkirk (2007) represents an explicit account of this approach. They propose that every sentence requires a syntactically represented topic. This topic requirement may be satisfied by a strong non-subject argument. In German, for instance, the demonstrative *dieses Haus* "this house" as a strong DP can satisfy the topic requirement. This allows the subject *Maffiosi*, "mafia members," to remain low and be non-topical, as seen in (21). The bare plural *Häuser*, "houses," on the other hand, as a weak DP cannot satisfy the topic requirement, leaving the subject as the only option available for satisfying the topic requirement, as seen in (22).

(21) a. Ich weiss, dass dieses Haus Maffiosi besitzen. (existential possible)
I know that this house mafia.members own
'I know that mafia members own this house.'

b. $[_{CP}\ [_{TopP}$ dieses Haus$_i$ $[_{TP}\ t_i\ [_{vP}$ Maffiosi $[_{V'}\ t_i\ t_V\ ]$ besitzen$_{V'}$ + v] T] Top]]

(22) a. Ich weiss, dass Maffiosi Häuser besitzen. (generic only)
I know that mafia.members houses own
'I know that mafia members own houses.'

b. $[_{CP}\ [_{TopP}$ Maffiosi$_i$ $[_{TP}\ t_i\ [_{vP}\ t_i\ [_{VP}$ Häuser besitzen$_V$] v] T] Top]]

3.3. Event Composition or Information Structure?

The effect of the quantity of an object on the telicity of an event has been defended over a wide number of studies, and, to my knowledge, no account of information structure has been given for the analysis of telicity.[9] Concerning

[8]This approach is adopted by Fernald (2000) who uses it to maintain the core of the Kratzer/Diesing approach to stage-level/individual-level predicates.

[9]de Hoop (1996) attempts to tie telicity to the weak/strong distinction, making her analysis the closest to an information structure account for telicity. However, de Hoop notes serious problems

existential interpretation, however, many information structure accounts now exist, and no account has linked existential interpretation to a theory of aktionsart.[10]

A reason for this state of affairs may be due to the limited evidence under consideration concerning the effects of objects on states. While a wide range of evidence has been considered for the effects of objects on events, the literature has only considered demonstrative and bare plural objects in states. These two cases, however, are not sufficient to capture the relevant differences between event composition theories and information structure theories. Deciding between these two positions requires further evidence.

Below I consider a wider range of evidence, focusing primarily on the type of objects and then considering the effects of generic objects, object scrambling, and cases of extraction.

3.3.1. Type of Object

To begin, event composition and information structure analyses make different predictions concerning which types of objects will affect the availability of existential interpretation. Both theories predict that mass noun and bare plural objects will fail to license an existential interpretation since these object types are both homogeneous and weak. Both theories also predict that strong determiner and strong quantifier objects will license an existential interpretation since these object types are both quantized and strong. Where these two theories differ is around bare numeral, weak determiner, and weak quantifier objects which are quantized and weak.[11] Event composition theories

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with such a theory, as even in the presence of the particle *up* which licenses a telic interpretation of an event, an existential interpretation of the object is possible. Thus telic interpretations can emerge in the presence of a weak object, contrary to the expectation of a theory in which telicity and the weak/strong distinction are tightly connected.

(i) Jane drank up two glasses of wine. (cardinal possible)

[10]Work by McNally (1998b) and Dobrovie-Sorin (1997) perhaps comes closest to an aktionsart theory of existential interpretation by attempting to tie the availability of existential interpretation to a predicate's spatial localization. Those predicates which are localized in space license existential interpretation because existence is a prerequisite for having a spatial location. Similarly, Borer (2005b, 2010) ties existential interpretation to location, but for eventive predicates.

[11]Determining whether a DP is strong or weak is not a straightforward affair; however, McNally (1998a) provides several criteria which I follow here. Assuming initially that every DP denotes a quantifier-type, $\langle\langle e, t\rangle, t\rangle$, weak DPs are those which have a well-defined property-type denotation, $\langle e, t\rangle$, under the *BE* type-shift from Partee (1987).

(i) $BE(\alpha) = \lambda x[\alpha(\lambda y[y = x])]$, α is a set of sets of atomic or sum individuals.

DPs which are fundamentally relational, for instance, are unable to satisfy the requirements of (i) because they cannot be treated as one-place predicates. McNally also argues that weak DPs must satisfy a novelty condition that captures quantifiers with singleton set generators like demonstratives.

predict that these object types should license an existential interpretation since they are quantized. Information structure theories predict that these object types should fail to license an existential interpretation since they are weak.

While the literature on the effects of objects on telicity has examined a full range of object types, the literature on the effects of objects on existential interpretation has not, having only considered demonstrative and bare plural objects. Demonstratives are both quantized and strong, and bare plurals are both homogeneous and weak. Therefore these cases cannot be used to determine whether quantization or the strong/weak distinction make the proper cut for those objects which license an existential interpretation. The critical cases of quantized and weak objects for states is provided in (23)–(25). In all cases, an existential interpretation is judged to be possible.[12] This argues against information structure theories which do not predict the availability of an existential interpretation given a weak object, and for event composition theories which do predict the availability of an existential interpretation given a quantized object.

(23) a. Monkeys live in three trees. (existential possible)
b. Tycoons own two banks. (existential possible)

(24) a. Monkeys live in a tree. (existential possible)
b. Tycoons own a bank. (existential possible)

(25) a. Monkeys live in several/many trees. (existential possible)
b. Tycoons own several/many banks. (existential possible)

3.3.2. Generic Objects

One issue concerning the critical quantized and weak cases for type of object effects on the availability of existential interpretation given in (23)–(25) is that in each of these cases, the object itself appears to be interpreted existentially. One possibility for a situated discourse analysis to pursue is that although these objects are weak, their existential interpretation provides a situated effect and licenses an existential inference for the subject.

[12]While bare numeral and singular indefinite object sentences are judged to license an existential interpretation, these judgments are more fragile. Use of a context like (i) strengths these judgments and judgments also become more firm when these sentences are presented in a list as in (ii) (similar to list readings discussed in Schmitt (1996)).

(i) a. Monkey Context: "Behind my house is a mangrove forest."
b. Tycoon Context: "In this city there are over 50 privately owned banks."
(ii) a. Monkeys live in a tree, bats live in a cave, and weasels live in a burrow.
b. Tycoons own a bank, lawyers own a firm, and hippies own a coffee shop.

While the role played by context in licensing existential interpretation is unclear at present, some possibilities are discussed in Fernald (2000), Glasbey (1997), and Husband (2010b).

To address this, we need cases where existential interpretation is not assigned to object position. The closest cases for this come from Cohen and Erteschik-Shir (2002) and Glasbey (2007) who observe a difference in (26). In particular, the verb *hate* does not license an existential interpretation for a bare plural object.

(26) a. John knows lawyers. (existential possible)
b. John hates lawyers. (generic only)

Looking at weak objects more generally, these verbs show similar differences. The example in (27a) can mean that the lawyers that Johns knows are many/few in number, but the example in (27b) does not have the meaning that the lawyers that Johns hates are many/few in number. Instead, it has a meaning that John hates many/few of all the lawyers.[13]

(27) a. John knows many/few lawyers. (cardinal possible)
b. John hates many/few lawyers. (partitive only)

Considering these cases, a situated discourse analysis of existential interpretation predicts that *hate* with quantized and weak objects would fail to license an existential interpretation of its subject because without existential interpretation the quantized but weak object cannot create the situated effect which licenses the existential inference. This prediction is not born out. The subject in (28) can be interpreted existentially.[14]

(28) Business men hate many/few lawyers. (existential possible)

3.3.3. Object Scrambling

Returning briefly to German, the scrambling of a demonstrative object to topic position was taken as supporting evidence that the existential interpretation of a subject is related to the topic of a sentence and the availability of a strong non-subject argument. Since a demonstrative object can scramble and become a topic, the subject can remain low and receive existential interpretation. However, German also allows the demonstrative to remain low. The choice does appear

[13]Consider the following context for both (26) and (27).

(i) John and I work at a law firm together with over 300 employees.

With *know*, John might know just a few number of lawyers, like 10, but with *hate*, John must hate a vast majority of them.

[14]The following context may be helpful in establishing the interpretation of (28).

(i) I work at a banking conglomerate with thousands of employees.

For (28), I could be talking about only a few particular business men, again 10 or so, who hate a vast majority of the lawyers in our company.

to be related to topic: (29a), repeated from (21a), can be uttered when the topic is about a particular house, while (29b) can be uttered when the topic is about crime in a neighborhood. Interestingly, in both cases, *Maffiosi* 'mafia members' can receive an existential interpretation.[15]

(29) a. Ich weiss, dass dieses Haus Maffiosi (existential possible)
I know that this house mafia.members
besitzen.
own
'I know that mafia members own this house.'

b. Ich weiss, dass Maffiosi dieses Haus (existential possible)
I know that mafia.members this house
besitzen.
own
'I know that mafia members own this house.'

This contrasts with the case of bare plural objects. As shown in (30a), bare plurals cannot scramble.[16] Only (30b), repeated from (22a), is acceptable. Here the bare plural remains low and the subject cannot receive an existential interpretation.

(30) a. *Ich weiss, dass Häuser Maffiosi besitzen.
I know that houses mafia.members own

b. Ich weiss, dass Maffiosi Häuser besitzen. (generic only)
I know that mafia.members houses own
'I know that mafia members own houses.'

3.3.4. Extraction from Objects

Kratzer and Selkirk (2007) propose that movement is required to establish a syntactically represented topic. As such, constraints on movement may provide a further case for evaluating the requiring topics approach, and information structure approaches more generally.

In general, extraction out of generic objects is blocked (Erteschik-Shir, 1973; Fiengo & Higginbotham, 1981). Diesing (1992) linked this constraint to movement and the Mapping Hypothesis: extraction out of a generic object is prohibited because generic objects are required to raise out of VPs. She notes

[15]Of course the lack of overt scrambling of the demonstrative does not preclude the possibility of covert scrambling (Kratzer, 1995). Although discourse factors were used to control for this possibility, given the controversial nature of the relationship between syntactic and discourse topics, I cannot rule out this possibility on the basis of this data alone.

[16]These judgments are reported from two Northern German dialect speakers. A speaker of a Southern German dialect gave weaker judgments, though all speakers report (30a) as marked if not outright unacceptable.

that this can be viewed as a specific formulation of the more general Freezing Condition (Wexler & Culicover, 1980).[17]

This constraint on extraction offers us two viewpoints on information structure theories. First, if objects are required to move to a topic position to become topics as Kratzer and Selkirk (2007) argue, extraction should block this movement and prevent objects from satisfying the topic requirement. This predicts that extraction out of quantized objects should block existential interpretation for subjects in states since only the subject will be able to move to topic position to satisfy the topic requirement. Second, if extraction forces the object to remain low, then extraction out of bare plural objects should force those objects to be existentially interpreted. Given an implementation of Glasbey's (1997) idea where existential objects give rise to a situated effect, extraction out of bare plural objects should license existential interpretation for subjects in states since these objects would be existential and thus create a situating context.

Neither predication is born out. First, extraction out of a quantized object of a state still allows the quantized object to license an existential interpretation of the subject, as seen in (31). Second, extraction out of a bare plural object of a state does not allow the bare plural object to license an existential interpretation of the subject, as seen in (32).[18]

(31) a. What type of tree do monkeys live in several groves of? (existential possible)
b. Which person do tycoons own many paintings of? (existential possible)

(32) a. What type of tree do monkeys live in groves of? (generic only)
b. Which person do tycoons own paintings of? (generic only)

Parallel to these findings, extraction out of objects also does not change the effect these objects have on licensing telicity in events. Extraction out of a quantized object still licenses a telic interpretation, as in (33), and extraction out of a homogeneous object still fails to license a telic interpretation, as in (34).[19]

(33) a. Which person did John paint some pictures of in six months.
b. What did the students solve many problems about in an hour.

[17]In support of verbs like *hate* having generic objects, Diesing (1992, p. 117) notes that extraction from the objects of these verbs is quite marked.

(i) *Who do you usually hate an article about?

[18]See footnote 12 for contexts to aid the interpretations given in (31) and (32).

[19]Some event composition theories argue for movement of the object to an aspectual position in order to license telicity. If movement were indeed required to license a telic interpretation, we would expect to see extraction induce a freezing effect, preventing movement of the object and blocking a telic interpretation. Since extraction does not block telic interpretations licensed by the object, approaches based on Agree rather than Move may better capture the relationship established between an aspectual phrase and the object (MacDonald, 2008b).

(34) a. Which person did John paint pictures of *in six months.
b. What did the students solve problems about *in an hour.

In summary, I have presented four cases against information structure accounts of the effects of objects on the interpretation of states. Bare numeral and weak determiner/quantifier objects can license existential interpretation although they cannot be topics. This is the case even when the weak DP is the object of a verb which does not license existential interpretation of its object. Object scrambling in German was demonstrated to be unrelated to existential interpretation, at least overtly, and objects which are frozen due to extraction are still able to license existential interpretation. This evidence points to an event composition account of the effects of objects for both events and states.

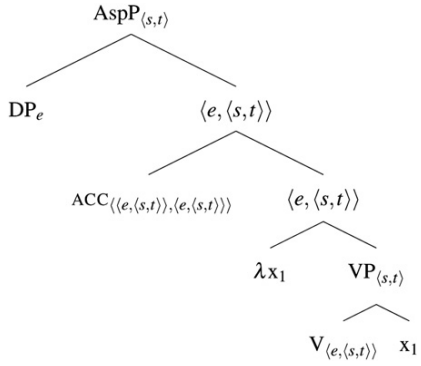
4. EXTENDING EVENT COMPOSITION

The observations above support a tight relationship between the effects of objects on the interpretation of states and the interpretation of events. Both state and event interpretation rely on the quantization of the object.

4.1. Composing the VP

Following Kratzer (2004), the structure of the extended VP is given in (35).[20] Accusative case, repeated in (36), plays a prominent role in this structure, relating the object to its VP and introducing a mapping to events. While her analysis only considers events, I extend it here to also include states, taking the semantic type *s* to range over both states and events. As such, the mapping to events introduces the part structure of the object to both event and state eventuality arguments, yielding quantized and homogeneous eventualities.

(35)



[20]The motivation for the details of this structure and this particular implementation of predicate abstraction, while important, are beyond the scope of this chapter. See Kratzer (2004) for motivation and discussion.

(36) $[\![\text{ACC}]\!] = \lambda R_{\langle e,\langle s,t\rangle\rangle}\lambda x\lambda e[R(x)(e)\ \&\ \underbrace{\forall x'[x' \leq x \rightarrow \exists e'[e' \leq e\ \&\ R(x')(e')]]}_{\text{Mapping to Events}}]$

Examples of quantized eventualities are given in (37). A quantized event is given in (37a) and a quantized state is given in (37b). Examples of homogeneous eventualities are given in (38). A homogeneous event is given in (38a) and a homogeneous state is given in (38b).

(37) a. $[\![$ solve the problem $]\!] = \lambda e$[solve(the-problem) (e) & $\forall\ x'$ $[x' \leq$ the-problem $\rightarrow \exists e'[e' \leq e$ & solve$(x')(e')]]]$

b. $[\![$ own this bank $]\!] = \lambda s$[own(this-bank)(s) & $\forall x'[x' \leq$ this-bank $\rightarrow$ $\exists s'[s' \leq s$ & own$(x')(s')]]]$

(38) a. $[\![$ solve problems $]\!] = \lambda e$[solve(problems) (e) & $\forall x'[x' \leq$ problems $\rightarrow$ $\exists e'[e' \leq e$ & solve$(x')(e')]]]$

b. $[\![$ own banks $]\!] = \lambda s$[own(banks)(s) & $\forall x'[x' \leq$ banks $\rightarrow \exists s'$ $[s' \leq s$ & own$(x')(s')]]]$

For a quantized eventuality, the mapping to events maps the part structure of the quantized object to the eventuality. For an event like (37a), the quantized object *the problem* presents no proper part which is also *the problem*. The meaning of accusative case maps the quantized part structure of *the problem* to the part structure of the event e by stating the existence of subevents e' which are solvings of the proper parts of *the problem*. Since *the problem* has only one part, namely itself, the only subevent e' asserted is the one identical with the event e. For a state like (37b), the demonstrative object *this bank* is quantized and thus there is no proper part which is also *this bank*. The meaning of accusative case maps the quantized part structure of *this bank* to the part structure of the state s by stating the existence of substates s' which are ownings of the proper parts of *this bank*. Since *this bank* has only one part, namely itself, the only substate s' asserted is the one identical with the state s.

For a homogeneous eventuality, the mapping to events maps the part structure of the homogeneous object to the eventuality. For an event like (38a), the homogeneous object *problems* has proper parts which are also *problems*. The meaning of accusative case maps the homogeneous part structure of *problems* to the part structure of the event e by stating the existence of subevents e' which are solvings of the proper parts of *problems*. Since *problems* has unbounded numbers of proper parts which are also *problems*, an unbounded number of subevents e' is asserted. For a state like (38b), the bare plural object *banks* is homogeneous and thus has proper parts which is also *banks*. The meaning of accusative case maps the homogeneous part structure of *banks* to the part structure of the state s by stating the existence of substates s' which are ownings of the proper parts of *banks*. Since banks has unbounded numbers of

proper parts which are also *banks*, an unbounded number of substates s' is asserted.

4.2. Voice in Events and States

Thus far only a sortal distinction has been proposed between events and states, but is there more to the event/state distinction? Certainly clues are present in the interpretative differences which are affected by the quantization of objects.

For events, the quantization of the object affects the interpretation of telicity. An event's telicity is about its quantization, that is, whether the event has "internal quantifiable divisions" because it fails to be either cumulative or divisive (Borer (2005b), but also see Dowty (1979); Hinrichs (1985), and Mourelatos (1978) for earlier discussion, and Krifka (1989, 1992, 1998) for further analysis). Quantized events are telic because they have a quantifiable division, unlike homogeneous events which are cumulative and divisive and therefore atelic.

For states, the quantization of the object affect the availability of an existential interpretation for the subject. The literature, however, has not tightly linked existential interpretation to whether a state has quantifiable divisions. Indeed, existential interpretation is seen more as a phenomenon of individuals. Thus the relationship between quantization and existential interpretation does not seem so straightforward. While I will not motivate a full analysis here, I assume that quantization over an individual relates to the stages of that individual, where a *stage* is understood to be "roughly, a spatially and temporally bounded manifestation of something," and an *individual* is "that whatever-it-is that ties a series of stages together to make them stages of the same thing" (Carlson, 1977, p. 68). Under this analysis, quantized individuals are existential because they are about a stage of that individual, that is, an internal quantifiable division of that individual. Since a stage is spatially and temporally bounded, existence is inferred. Homogeneous individuals, being both cumulative and divisive, lack that quantifiable division and are about the individual in toto. Further motivation and discussion of the relationship between quantization, stages of individuals, and existential interpretation see Husband (2010a, 2010b, 2012).

Thus, when it comes to their relationship with their subject, events and states receive different treatments. For states, the quantization of the object, first mapped to the state by the meaning of accusative case, must also be mapped to subject. For events, the quantization of the object does not affect the subject's interpretation. Instead, the quantization of the subject affects telicity (Verkuyl, 1972). Given the quantized subjects in (39), and *for x time* modifier can only be interpreted iteratively/incompletely, indicating a telic interpretation. The homogeneous subjects in (40) permit a *for*

x time modifier to establish the duration without iterativity/incompletion, indicating an atelic interpretation (Dowty, 1989; Schmitt, 1996; Verkuyl, 1993). This suggests that the quantization of the subject is also mapped to the event.[21]

(39) a. A gallon of water leaked through the roof #for an hour.
b. The people walked out of the house #for an hour.
c. The settlers crossed the desert #for years.

(40) a. Water leaked through the roof for an hour.
b. People walked out of the house for an hour.
c. Settlers crossed the desert for years.

To capture these facts, I follow Kratzer (1996) in assuming that the subject is introduced by a functional head, Voice. The denotation of a Voice head is composed with meaning of a predicate by the compositional rule of Event Identification, given in (41), which adds conditions to the eventuality, as in (42).

(41) Event Identification:

$$f_{\langle e,\langle s,t\rangle\rangle} \quad g_{\langle s,t\rangle} \quad \rightarrow \quad h_{\langle e,\langle s,t\rangle\rangle}$$
$$\lambda x\lambda e[f(x)(e)] \quad \lambda e[g(e)] \quad \rightarrow \quad \lambda x\lambda e[f(x)(e)\ \&\ g(e)]$$

[21]Not all subjects appear equally capable of licensing an atelic interpretation of an event (MacDonald, 2008a; Tenny, 1987). An anonymous reviewer suggested that that the subjects in (39) and (40) may differ from those in (i) and (ii) because they are derived either by being generated within the VP or controlling a PRO within the VP.

(i) a. The wildlife ate a sheep #for ten minutes.
b. The mechanics fixed the car #for an hour.
c. The thieves broke the window #for half a minute.

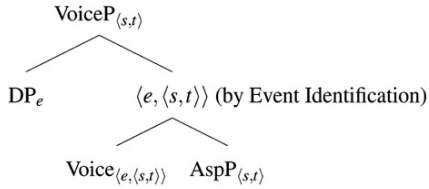
(ii) a. Wildlife ate a sheep #for ten minutes.
b. Mechanics fixed the car #for an hour.
c. Thieves broke the window #for half a minute.

The verb *break*, however, likely forms achievement predicates, as its telicity is not dependent on its internal argument, as seen in (iiic). Also, my judgment for *eat* and *fix* is more forgiving than MacDonald's and the reviewer's, and I note that the telicity of *eat* and *fix* is dependent on its internal argument, as seen in (iiia) and (iiib). I further suspect that the definiteness/singleness of the internal argument and certain aspects of world knowledge interfere with the atelic interpretation of (iia) and (iib).

(iii) a. Fluffy ate meat for ten minutes.
b. John fixed stereo equipment for an hour.
c. Bill broke furniture #for half a minute.

That said, I set this question aside for now in pursuit of the analogy presented here, but note that this is an important issue for future research.

(42)



Kratzer also proposes that Event Identification is constrained by aktionsart: the predicates it combines together must be of the same aktionsart type. This constrains the relationship between θ roles and events and states: events have agents and states have holders. I extend Kratzer's eventive and stative Voice heads to include a mapping function. The eventive Voice head in (43) assigns an agent θ role to its subject and also maps the subjects quantization to the event through a mapping to events, asserting that for every part of the subject there is a subevent which that subpart of the subject is the agent of. The stative Voice head in (44) assigns a holder θ role to its subject and also maps the quantization of the state to the subject through a mapping to objects, asserting that for every substate there is a part of the subject which is the holder of that substate.

(43) $[\![\text{Voice}_E]\!] = \lambda x \lambda s[\text{Agent}(x)(e) \;\&\; \underbrace{\forall x'[x' \leq x \rightarrow \exists e'[e' \leq e \;\&\; \text{Agent}(x')(e')]]}_{\text{Mapping to Events}}]$

(44) $[\![\text{Voice}_S]\!] = \lambda x \lambda s[\text{Holder}(x)(s) \;\&\; \underbrace{\forall s'[s' \leq s \rightarrow \exists x'[x' \leq x \;\&\; \text{Holder}(x')(s')]]}_{\text{Mapping to Objects}}]$

Examples following from (37) and (38) are given in (45) and (46), respectively.

(45) a. $[\![$ The student solved the problem $]\!] = \lambda e$[Agent(the-student)(e) & $\forall x'[x' \leq$ the-student $\rightarrow \exists e'[e' \leq e$ & Agent(x')(e')]] & [solve (the-problem) (e) & $\forall x'[x' \leq$ the-problem $\rightarrow \exists e'[e' \leq e$ & solve (x')(e')]]]]

b. $[\![$ Tycoons own this bank $]\!] = \lambda s$[Holder(Taycoons)(s) & $\forall s'$ $[s' \leq s \rightarrow \exists x'[x' \leq$ Tycoons & Holder(x')(s')]] & [own(this-bank)(s) & $\forall x'[x' \leq$ this-banks $\rightarrow \exists s'[s' \leq s$ & own(x')(s')]]]]

(46) a. $[\![$ The student solved the problems $]\!] = \lambda e$[Agent(the-student)(e) & $\forall x'[x' \leq$ the-student $\rightarrow \exists e'[e' \leq e$ & Agent(x')(e')]] & [solve(problems)(e) & $\forall x'[x' \leq$ problems $\rightarrow \exists e'[e' \leq e$ & solve(x')(e')]]]]

b. $[\![$ Tycoons own banks $]\!] = \lambda s$[Holder(Tycoons)(s) & $\forall s'[s' \leq s \rightarrow$ $\exists x'[x' \leq$ Tycoons & Holder(x')(s')]] & [own(banks)(s) & $\forall x'[x' \leq$ banks $\rightarrow \exists s'[s' \leq s$ & own(x')(s')]]]]

For the case of the quantized event in (45a), the event consists of a single event, a solving of the problem. The mapping to events introduced by the eventive Voice head maps the part structure of the subject to the event, asserting that for every part of the subject there is a subevent of solving the problem which that part of the subject is the agent of. Since there is only one part of the subject *the student*, namely itself, there is only one event of the student as agent of the solving the problem. Since the VP event was quantized to begin with and the subject introduces no homogeneity to the event, a telic interpretation emerges. Similarly, for the case of the homogeneous event in (46a), the event consists of a homogeneous set of subevents of solving problems. The mapping to events introduced by the eventive Voice head maps the part structure of the subject to the event, asserting that for every part of the subject there is a subevent of solving problems which that part of the subject is the agent of. Since there is only one part of the subject *the student*, namely itself, there is only one event of the student as agent of solving problems. Although the subject introduces no homogeneity to the event, the VP event was already homogeneous and an atelic interpretation emerges.

For the case of the quantized state in (45b), the VP state consists of a single state, an owning of this bank. The mapping to objects introduced by the stative Voice head asserts the existence of a stage of the subject for each substate, but since there is only one substate, namely, the state itself, only one stage of the subject is asserted as the holder of that state. Since this is a quantized stage, it is spatiotemporally bounded and existential interpretation becomes available. Similarly for the homogeneous state in (46b), the VP state consists of a homogeneous part structure of substates, each an owning of banks. The mapping to objects introduced by the stative Voice head asserts the existence of a stage, that is, a part, of the subject for each of these substates such that that stage of the subject is the holder of that substate. Since this is a homogeneous set of stages, no spatiotemporal bound is given and existential interpretation is unavailable.

4.2.1. Nominalizations of Events and States

As a consequence of the analysis above, constructions which affect the presence of Voice are predicted to also affect the mapping relations it establishes between the subject and its eventuality which are involved in licensing existential interpretation and telicity. To detect the presence of Voice, Kratzer (1996) turns to nominalizations, arguing that Voice projects only when accusative case is assigned to the object. Following Abney (1987), Kratzer proposes that nominalizing affixes like *-ing* attach to different syntactic levels of the extended verbal projection. Possessive gerunds result from *-ing* attaching to the VP. Kratzer argues that accusative case is assigned to the object and Voice must project in possessive gerunds as in (47). *of* gerunds

result from *-ing* attaching to the verb. Kratzer argues that this prevents the assignment of accusative case to the object and thus also blocks Voice, as given in (48).

(47) a. Maria's reading *Persuasion*
b. [$_{DP}$ Maria$_i$ ['s [$_{NP}$ -ing [$_{voiceP}$ t_i [Voice [$_{VP}$ read [$_{DP}$ *Persuasion*]]]]]]]

(48) a. Maria's reading of *Persuasion*
b. [$_{DP}$ Maria ['s [$_{NP}$ [-ing read] [$_{PP}$ of *Persuasion*]]]]

Of particular interest here is the range of interpretations the genitive subject of these gerunds can express. For possessive gerunds, the genitive DP must express the agent relation to the event, given in (49). It must be the case that Maria was the agent of the reading *Persuasion* event. However, for *of* gerunds, the genitive DP may express "a general notion of relatedness of which the agent relation is but a special case" (Kratzer, 1996, p. 128) to the event, given in (50). That is, Maria may have only attended a reading of *Persuasion* and we are using that to identify the event.

(49) We remember Maria's reading *Persuasion*.
a. Maria is the Agent of the reading *Persuasion* event.
b. *Maria is only related to the reading *Persuasion* event.

(50) We remember Maria's reading of *Persuasion*.
a. Maria is the Agent of the reading *Persuasion* event.
b. Maria is only related to the reading *Persuasion* event.

The same restriction of interpretations due to the presence of Voice also occurs in states. The possessive gerund in (51) requires Glenn Beck to be the holder of a state of hating Obama. However, the *of* gerund in (52), while allowing Glenn Beck to be the holder of a state of hating Obama, also allows for a general notion of relatedness of Glenn Beck to a state of hating Obama. Indeed, (51) would be false if Glenn Beck has no feelings at all toward Obama, while (52) would be true.

(51) Glenn Beck's hating Obama was contagious.
a. Glenn Beck is the Holder of the hating Obama state.
b. *Glenn Beck is only related to the hating Obama state.

(52) Glenn Beck's hating of Obama was contagious.
a. Glenn Beck is the Holder of the hating Obama state.
b. Glenn Beck is only related to the hating Obama state.

Since I have extended the meanings of Voice heads to include not only the θ role of the subject but also a quantization mapping relating the subject and its

eventuality, nominalizations should also serve as tests for the presence of these mapping relations.

For events, the possessive gerunds in (53) show the effect of the subject on the interpretation of *for x time* discussed for the examples in (39) and (40). The quantized subject in (53a) only allows for an iterative/incompletive interpretation of *for years*, but the homogeneous subject in (53b) permits a durative interpretation. The *of* gerunds in (54) do not show this effect. Both (54a) and (54b) permit a durative interpretation, as expected if the mapping of the subject to the event is not present.

(53) a. The people's crossing the desert #for years irritated the state.
b. People's crossing the desert for years irritated the state.

(54) a. The people's crossing of the desert for years irritated the state.
b. People's crossing of the desert for years irritated the state.

For states, the possessive gerunds in (55) show the effects of objects. Since accusative case is assigned and Voice projects, the mapping to events from the object to the state and the mapping to objects from the state to the subject are both present. The quantized object in (55a) thus quantizes the subject, licensing existential interpretation. Also, the homogeneous object in (55b) imparts its homogeneity on the subject, blocking existential interpretation. The *of* gerunds in (56) do not show the effects of objects. Neither the mapping to events nor the mapping to objects is present since accusative case is not assigned, preventing the projection of Voice.

Thus both (56a) and (56b) fail to license an existential interpretation.[22]

(55) a. News anchors' hating these politicians was contagious. (existential possible)
b. News anchors' hating politicians was contagious. (generic only)

(56) a. News anchors' hating of these politicians was contagious. (generic only)
b. News anchors' hating of politicians was contagious. (generic only)

5. CONCLUSION

The main idea explored here has been that there are interesting and striking parallels between the availability of existential interpretation and telicity.

[22]The judgments for (55) and (56) is quite subtle, even with the following supporting context.

(i) I enjoy watching Fox News occasionally, especially their political roundtable discussions.

Many thanks to E. Cunningham for her clear intuitions concerning this data.

Given the large literature arguing that the analysis of telicity involves distinctions of quantization and is established first and foremost by the composition of the verb and its object, and not by topicality and information structure, the same analysis may be true for the existential interpretations of subjects derived from stage-level/individual-level predicates. Following a line of analogy concerning the effects objects have on the interpretation of events and states, I have extended the data on the effects of objects on existential interpretation and proposed an analysis in which VP composition is unified and Voice plays a prominent role in introducing the subject and relating the subject and the eventuality by quantization. The subjects of events impart their quantization on the event itself; whereas, the subjects of states receive the quantization of the state. This approach links together the behavior of events and states, pointing toward the possibility of a more unified theory of aktionsart.

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6

EXTERNAL ARGUMENT-INTRODUCING HEADS: VOICE AND APPL

Kyumin Kim

ABSTRACT

Voice and high Appl are both argued to introduce external arguments. However, at present, no theory proposes how Voice and Appl should be distinguished in argument structure. This chapter aims to address this question by examining morphological causatives in Korean, experiencer *have* in English, and experiencer constructions in Georgian. It is shown that Voice and high Appl are not in the same position in syntax, and that the semantics of Voice and high Appl are not the same; Voice is specified for agentivity, while high Appl is specified for non-agentivity. This chapter also suggests that there is an Appl that is syntactically different from high Appl, namely peripheral Appl. Although peripheral Appl is non-agentive like high Appl, peripheral Appl differs from high Appl in position — it merges above VoiceP. The proposed analysis broadens the scope of current configurational theories by arguing that the external argument-introducing heads Voice and Appl bear semantic content which restricts the types of arguments that can occur in their specifier position, showing that

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the mapping of semantics to syntax can be more complex than is normally assumed. In general, the mapping of semantics to syntax is thought to be many-to-one, as for example in the mapping of both agents and experiencers to subject position. In contrast, this chapter shows that one-to-one mapping is possible: agentive and non-agentive external argument roles are mapped to different positions.

Keywords: Applicative, voice, agentivity, external arguments

1. INTRODUCTION

Theories of argument structure are largely theories about how arguments are projected into syntax and how arguments are semantically interpreted (e.g., Hale & Keyser, 1993). In particular, the projection and interpretation of external arguments (Kratzer, 1996; Marantz, 1984, among others) has been at the center of discussions in theories of verbal argument structures. This chapter focuses on the similarities and differences of the external argument-introducing heads, Voice (Kratzer, 1996) and the high applicative head (henceforth, high Appl) (Pylkkänen, 2002, 2008).[1]

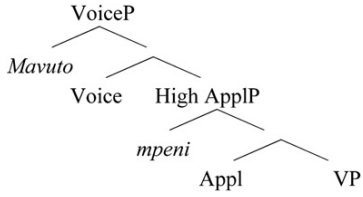
Voice is proposed to introduce an argument external to VP (Kratzer, 1996) (see (1b) below). Likewise, high Appl is proposed to introduce an argument external to VP in the same manner as Voice (Pylkkänen, 2002, 2008). For instance, in Chichewa (1a), high Appl introduces the instrument 'the knife', and it is argued to merge external to VP. Since Pylkkänen's proposal of high Appl, its use has become prevalent in the literature. High Appl has been proposed to introduce various arguments in various languages, such as unintentional causers in Spanish (Cuervo, 2003) or affectees in Bulgarian (Rivero, 2009).

(1) a.

Mavuto	a-na-umb-ir-a		mpeni	mtsuko
Mavuto	SP-PAST-mould-APPL-ASP		knife	waterpot

'Mavuto molded the waterpot with a knife'

b.

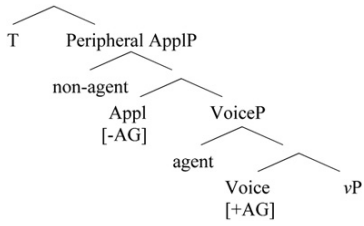


[1]There is another type of applicative, a low applicative, that denotes a relation between two entities (Pylkkänen, 2008). Unlike high Appl, low applicatives denote a transfer of possession relation (e.g., a relation between *Mary* and *cookies* in 'John baked Mary cookies').

Despite the extensive use of high Appl in recent literature, at present, no theory proposes how Voice and high Appl should be distinguished in terms of argument structure. Before the introduction of high Appl, Voice was previously proposed to introduce its arguments with the aid of various features (e.g., agentive feature, Voice [+AG] or Voice [−AG]). Why do we need two heads if they both introduce arguments external to VP? What is lacking in current theories on argument structure is an explicit account of the distinction of the roles of each head, and the consequences of such a distinction. The main claim of this chapter is that Voice and high Appl are different both *syntactically*, see (1b), as well as *semantically* (2). Agentivity is specific to Voice, while this is not the case for high Appl.[2] Moreover, I argue that there is a syntactically different Appl from high Appl, namely peripheral Appl (3). Although the semantics of peripheral Appl are similar to that of high Appl (2b) in being non-agentive, peripheral Appl is different from high Appl in that it can merge above VoiceP.[3]

(2) a. Voice [+AG] b. High Appl [−AG]

(3)



The analysis proposed in this chapter provides support for various forms of configurational theories (e.g., Baker, 1988, 1997, 2002; Borer, 2005; Hale & Keyser, 1993) in which there is a correspondence between the semantic role of an argument and its syntactic position. In particular, the analysis broadens the scope of current configurational theories by arguing that the external argument-introducing heads Voice and Appl bear semantic content which restricts the types of arguments that can occur in their specifier position. Thus, it seems that syntax-driven approaches to argument structure need to attribute

[2]In fact, the non-agentive semantics of high Appl seems to be implied in Pylkkänen's (2008) proposal (i), although it is not explicitly discussed. See Section 2.4 for discussion.

(i) λx.λe. high APPL (e,x)

[3]It may also be the case that low Appl is non-agentive, just like high and peripheral Appl, since the types of arguments introduced by low Appl are possessors, recipients and so on. Since low Appl is not the main focus of this chapter, I leave this open for future research.

some semantic content to these types of functional heads, as in a featural theory (Folli & Harley, 2005; Kallulli, 2007).[4]

1.1. Assumptions

I assume that an argument merged in Voice is interpreted as an agent only, contra Kratzer (1996) who proposes that Voice introduces an agent or a holder role (e.g., *John* in 'John owns a dog'). In particular, in line with syntax-driven approaches to argument structure (e.g., Baker 1988, 2002; Borer 1994, 1998, 2005; Hale & Keyser, 1993; Ritter & Rosen, 1998), I assume that an agentive semantic role of an external argument is a reflex of a particular structural relation between an argument and a head, namely Voice. The agent introduced by Voice is volitional (i.e., deliberate). As such, Voice is inappropriate for introducing non-agentive external arguments, such as causees (Section 2) and affectees (Section 3). I propose that Appl is responsible for introducing such non-agentive external arguments.[5]

Following current work on argument structure (Cuervo, 2003; Pylkkänen, 2002, 2008), I assume that Voice and v are not the same. That is, Voice is an external argument (in particular, agent) introducer and v is a verbalizing head that combines with a lexical root (Marantz, 1997). I further assume that v introduces an event of the predicate, as proposed by Harley (1995), Cuervo (2003), and Folli and Harley (2005). v combines with a root syntactically to build event predicates. For example, v_{CAUSE} corresponds to a causal event type. Thus, an argument merged in the specifier of VoiceP that combines with v_{CAUSE} is interpreted as a causer.

1.2. Organization of the chapter

This chapter is organized as follows. Section 2 argues that Voice and (high) Appl are semantically different. Section 3 argues that there is a an Appl head that is syntactically different from high Appl — peripheral Appl. Section 4 presents morphological evidence for having two different external argument-introducing heads. Section 5 discusses the consequences of the proposed analysis. Section 6 concludes this chapter.

[4]See Ritter and Rosen (2010) or Butt (2003) for a similar view.

[5]The proposed analysis raises the following question: what type of head introduces a holder role in the sentence '*John* owns a dog.'? Since the holder role is non-agentive, we would expect Appl [−AG] to introduce this role. However, this may not be the case, at least for English. As argued in this chapter, Appl appears in a different syntactic position from Voice, as it is lower or higher than VoiceP. In English, an agent and a holder can both appear in the same position, which suggests that not only Voice [+AG], but also Voice [−AG], can introduce this holder role in languages like English. Alternatively, in English, Voice may be unspecified for agentivity, without restrictions on the semantic role of the argument in its specifier. To reach a more definitive conclusion regarding this issue, further cross-linguistic research is needed, which is beyond the scope of this chapter.

2. VOICE AND APPL ARE SEMANTICALLY DIFFERENT

In some languages, high ApplP can be a complement of causatives. This is absent in Pylkkänen's (2008) typology of the complement selections of causatives. I discuss the morphological causative in Korean as an example of causatives that have ApplP as a complement (Kim, 2011).[6] Allowing high ApplP to be a complement of causatives provides evidence for the semantic distinction between Voice and high Appl. Voice is specified for agentivity, but high Appl is not.

Morphological causatives in Korean are marked with the voice morpheme-*i* (henceforth-I morpheme), which may surface as *-i*, *-hi*, *-li*, or *-ki*[7] (Kang, 1997; Kim, 2011; Lee, 1986; Park 1994, among many others). This type of causative is exemplified in (4):[8]

(4) a. Swuni-ka Minswu-eykey chayk-lul ilk-hi-ess-ta
Suni-NOM Minsu-DAT book-ACC read-I-PAST-DEC
'Suni made Minsu read the book.'

b. Swuni-ka Minswu-eykey pap-lul mek-i-ess-ta
Suni-NOM Minsu-DAT rice-ACC eat-I-PAST-DEC
'Suni made Minsu eat the rice.'

2.1. No agent-introducing heads in the complements of causatives

A causee in the morphological causatives of Korean differs from the agentive causees in Italian, Japanese, and Luganda which are argued to be introduced by

[6]Some of the *faka*-causatives in Niuean, a Polynesian language of the Tongic subgroup (Gould et al., 2009) and English *have* causatives (Kim, 2012a) are also argued to take ApplP as a complement.

[7]The allomorphs are mainly phonologically conditioned (Yeon, 1991; J. Park, 1994).

[8]A reviewer raised the issue of whether the morphological causatives in Korean are not felicitous in contexts where an object is suppressed, similar to Romance benefective/malefactive datives (Roberge & Troberg, 2009). In Korean, the grammaticality of such constructions depends on the type of verb. Consider the causatives in (i):

(i) a. Swuni-ka Minswu-eykey khukey ilk-hi-ess-ta
Suni-NOM Minsu-DAT aloud read-I-PAST-DEC
'Suni made [Minsu read (the book) aloud (loudly)].'

b. *Swuni-ka Minswu-eykey chenchenhi/manhi mek-i-ess-ta
Suni-NOM Minsu-DAT slow/a lot eat-I-PAST-DEC
'Suni made [Minsu eat (the rice) slowly]/ [Minsu eat a lot (of rice)].'

The causative in (ia), where the object 'the book' is suppressed, is grammatical with the verb 'read', whereas (ib), where the object 'the rice' is suppressed, is ungrammatical with the verb 'eat'. This is because the causee with *read*-type verbs is an active participant of the event which can be modified by a manner adverb. In contrast, the causee with *eat*-type verbs is a static participant of the event which cannot be modified by a manner adverb (Kim, 2011). The grammaticality of the causatives in (i) remains the same, regardless of the suppression of the object.

the agent-introducing head v_{DO} (Folli & Harley, 2007; Harley, 2006) or Voice (Pylkkänen, 2008) (see Section 2.3 for further details).[9] In these languages, a causee must be animate, can be a binder, and can be modified by an agent-oriented adverb.

However, none of these properties are satisfied by causees in Korean morphological causatives. In some cases, a causee can be inanimate, as illustrated in (5):

(5) a. Swuni-ka inhyeng-ey kkoch-lul an-ki-ess-ta
Suni-NOM doll-DAT flower-ACC embrace-I-PAST-DEC
'Suni made the doll embrace the flower.'

b. Swuni-ka cha-ey saykkkal-lul ip-hi-ess-ta
Suni-NOM car-DAT color-ACC wear-I-PAST-DEC
Lit. 'Suni made the car wear color.' ('Suni painted the car.')

In Korean, the reflexive pronoun *caki* 'self' requires a semantic subject (presumably an agent) as its antecedent (Shibatani, 1973). This pronoun cannot be bound by a causee in morphological causatives (Shibatani, 1973; Um, 1995; Whitman & Hahn, 1988), as illustrated in (6):

(6) kimssi$_1$-ka ku sonye$_2$-eykey caki$_{1/*2}$-uy chayk-lul ilk-hi-ess-ta
Kim-NOM the girl-DAT self-GEN book-ACC read-I-PAST-DEC
'Mr. Kim$_1$ made the girl$_2$ read his$_1$/*her$_2$ book.'

In (6), the causee 'the girl' cannot bind the reflexive pronoun *caki* 'self', although the causer can be the binder. The animacy and binding facts shown in (5) and (6) indicate that the causee in morphological causatives cannot be an agent.[10] Another crucial piece of evidence that v_{DO} and Voice cannot be the head of the embedded phrase of Korean morphological causatives is that agent-oriented adverbs, such as *ilpule* 'on purpose' and *yelsengcekulo* 'with enthusiasm', cannot modify the causee in an embedded clause, as in (7) (J. Song, 1993; Kim, 2011):

(7) Swuni-ka Minswu-eykey chayk-lul ilpule/yelsengcekulo ilk-hi-ess-ta
Suni-NOM Minsu-DAT book-ACC on purpose/with enthusiasm read-I-PAST-DEC
i) 'Suni *on purpose/with enthusiasm* made Minsu read the book.'
ii) * 'Suni made [Minsu *read* the book *on purpose/with enthusiasm*].'

2.2. ApplP can be the complement of causatives

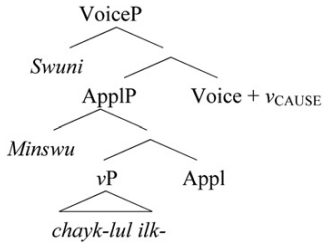
Building on the evidence presented in the previous section, I show how the patterning of the complements of causatives indicates that high

[9] v is assumed by Folli and Harley to introduce an external argument, which Voice does in this chapter.

[10] The binding facts also suggest that the causee cannot be a structural subject.

Appl introduces a non-agentive causee in Korean morphological causatives (8).[11,12]

(8) a. Swuni-ka Minswu-eykey chayk-lul ilk-hi-ess-ta
Suni-NOM Minsu-DAT book-ACC read-I-PAST-DEC
'Suni made Minsu read the book.'

b. 

First, morphological causatives have the same morphosyntactic properties as applicatives. The complement of the causative in (8a) fits with the argument structure of (either high or low) applicatives by having two DP arguments: a dative-marked causee and an accusative-marked theme.

The dative and accusative arguments also satisfy another syntactic property of applicatives — that of having an asymmetric c-commanding relation (Marantz, 1993). The quantified dative argument c-commands the accusative pronoun, as in (9a), but not vice versa, as in (9b).

(9) a. na-nun [motun cakkatul]$_1$-eykey kutul$_1$-uy chayk-lul ilk-hi-ess-ta
I-TOP all authors-DAT their-GEN book-ACC read-I-PAST-DEC
'I had$_{caus}$ [all authors]$_1$ read their$_1$ books.'

b. *na-nun kukestul$_1$-uy cakkatul-eykey [motun chayk-lul]$_1$ ilk-hi-ess-ta
I-TOP their-GEN authors-DAT all book-ACC read-I-PAST-DEC
'I had$_{caus}$ their$_1$ authors read [all books]$_1$.'

The discussion of the morphosyntactic properties and the structural relationship between the dative DP and the theme DP indicates that the embedded phrase of morphological causatives satisfies the syntactic property of

[11]Following Son (2006), I assume Korean is a Voice-bundling language in the sense of Pylkkänen (2008), where v_{CAUSE} combines with Voice to form a single element. The causative morpheme –I is argued to be realized under Voice. See Kim (2011) for further details.

[12]There is morphological evidence for the applicative approach proposed in this chapter. In Niuean, a high applicative is employed in causatives as a tool to extend the argument structure of a causative verb (Gould et al., 2009). In Kinyarwanda, causatives and applicatives share the same morpheme (Kimenyi, 1980).

applicatives where one DP merges higher than the other DP. Now the question arises as to which type of applicatives they are — low or high. The semantics of the embedded phrases of morphological causatives indicates that the embedded phrases belong to the high applicative group. It is well established in Korean that there is a thematic relationship between the dative argument and the embedded phrase, although there is no agreement on what type of thematic relation this should be (Shibatani, 1973; Son, 2006; Um, 1995). For example, in morphological causatives, a causee is thematically related to a caused event and traditionally the causee is considered to be the agent of the caused event.[13] Crucial to the present discussion is the fact that the semantics of the embedded phrase in morphological causatives is similar to that of high applicatives: a relation between an entity and an event, where the relation is not agentive (see (7) and Sections 2.3 and 2.4 for further details).

The high applicative test of compatibility with the static verb 'hold' (Pylkkänen, 2008) supports the high applicative approach for the Korean causatives. A Korean morphological causative is compatible with the verb 'hold', as shown in (10). More importantly, the sentence with the verb 'hold' (10) has the semantics of high applicatives, denoting a relation between a DP and an event, and not the transfer of possession relation between the two internal DPs that holds for low Appl.[14] For example, in the complement of the causative (10), there is a relation between the causee, 'Minsu', and the caused event, 'holding the book', and there is no transfer of possession relation between 'Minsu' and 'the book'.

(10) Swuni-ka Minswu-eykey chayk-lul tul-li-ess-ta
Suni-NOM Minsu-DAT book-ACC hold-I-PAST-DEC
'Suni had$_{caus}$ Minsu hold the book.'

There is another diagnostic for high Appl, namely compatibility with unergative verbs. According to Pylkkänen (2008), high Appl (but not low Appl) is compatible with unergative verbs, for example, *cry*. Korean morphological causatives allow unergatives (11), which suggests that they are high applicatives:[15]

[13]In the previous section, it was shown that a causee in Korean morphological causatives cannot be treated as an (volitional) agent.

[14]Spanish static low applicatives are compatible with the verb 'hold' (Cuervo, 2003), contrary to the prediction in Pylkkänen (2008). Cuervo concludes that compatibility with the verb 'hold' does not always indicate that a particular sentence involves a high applicative. Crucially, she also points out that we also have to examine whether a sentence in question possesses the semantics of high or low applicatives. For instance, in Korean, sentences that are compatible with the verb 'hold' have the semantics of high applicatives, a relation between a DP and an event, not low applicatives.

[15]Unlike causatives with transitives, such as (8), however, the causee 'Minsu' in (11) is marked with accusative case. Since the embedded phrase of the causative ('Minsu cry/laugh') denotes a relation between an entity and an event, I still argue that causatives like (11) embed high ApplP. I leave this issue aside for future research.

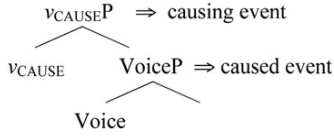
(11) Swuni-ka Minswu-lul wul-li/wus-ki-ess-ta
Suni-NOM Minsu-ACC cry-I-/laugh-I-PAST-DEC
'Suni made Minsu cry/laugh.'

2.3. Korean morphological causatives as applicative-selecting causatives

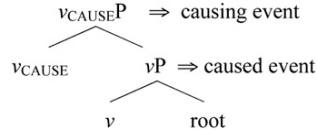
To the extent that the proposal according to which morphological causatives in Korean (8b) take a high applicative structure is correct, it provides solid evidence for expanding the typology of complement selection in causatives discussed in Pylkkänen (2008): ApplP is a possible complement of the causative head, v_{CAUSE}, as well as VoiceP and vP.

Pylkkänen (2002, 2008) proposes that the size of the complements of v_{CAUSE} can vary: phase-selecting causatives select a constituent with an external argument (e.g., VoiceP) (12a),[16] and verb-selecting causatives select a verb phrase whose head v does not introduce any arguments (12b).[17] v_{CAUSE} in (12) introduces a causing event to its complement.

(12) a. Phase-selecting causative



b. Verb-selecting causative



Crucially, in phase-selecting causatives (12a), (i) the causee can be modified by an agent-oriented adverb, due to the presence of VoiceP, and (ii) v_{CAUSE} can embed a high ApplP. In contrast, for verb-selecting causatives (12b), (i) the causee cannot be modified by an agent-oriented adverb due to the absence of VoiceP, and (ii) v_{CAUSE} cannot embed a high ApplP. Pylkkänen further argues that properties (i) and (ii) are correlated; if property (ii) is possible

[16]One may argue that an applicative-selecting causative is a subtype of a phase-selecting causative, given McGinnis' (2001, 2004) proposal that a high applicative is a phase in terms of A-movement. However, what the present analysis shows is that the complement selection of v_{CAUSE} is more specific in its selection of a particular head as its complement; phasal or non-phasal selection appears to be too general. Furthermore, the semantics of Voice and Appl differ, as shown by the agent-oriented adverb modification facts. This semantic distinction is sufficient to distinguish Appl from Voice without a (non)-phase distinction. I leave this issue as an open question.

[17]There is another type of causative, root-selecting causatives, which will not be discussed here.

(e.g., in phase-selecting causatives, if high ApplP is possible as a complement), agent-oriented modification of the caused event (i.e., property (i)) will also be possible, and vice versa.

However, evidence for the proposed structures for Korean (8b) suggests that this correlation does not always hold. Korean causatives are not phase-selecting causatives: v_{CAUSE} in Korean embeds a high ApplP, but unlike phase-selecting causatives, it cannot embed a VoiceP. Korean morphological causatives are not verb-selecting causatives either. Although they do not allow agent-oriented modification of a caused event like verb-selecting causatives, v_{CAUSE} can embed a high ApplP as its complement, which is disallowed in verb-selecting causatives. Thus, I argue that the morphological causatives in Korean are neither verb-selecting nor phase-selecting causatives. Rather, they represent a new type of causative — an applicative-selecting causative.

2.4. Semantics of Appl and Voice

A significant observation emerging from the previous section is that, contrary to Pylkkänen's claim, it is not the case that the embedding of Voice implies the embedding of high Appl or vice versa. In other words, even if v_{CAUSE} can embed a high ApplP, this does not necessarily imply that it can embed a VoiceP, as evidenced by the Korean examples, where the ability of v_{CAUSE} to embed a high ApplP did not entail that its caused event could be modified by an agent-oriented adverb.

I argue that this difference between applicative- and phase-selecting causatives is due to a semantic difference between high Appl and Voice: Voice is specified for agentivity, but high Appl is not. I assume that agentivity, AG, is a formal feature, and only this feature is lacking in high Appl. That is, the claim that high Appl lacks agentivity does not mean that it does not hold any meaning whatsoever.[18] An argument introduced by high Appl is non-agentive, whereas an argument introduced by Voice is agentive. Thus, as in Korean, causatives may select high ApplP as a complement, while disallowing VoiceP.[19]

The notion that high Appl introduces a non-agent appears to be present in the literature, but in a *non-explicit* manner (Cuervo 2003; Pylkkänen 2002, 2008). The proposal on the semantics of high Appl in Pylkkänen (2002, 2008) (see footnote 2) does not specify particular semantics for high Appl. It is clear

[18]It is questionable how various meanings of an applied argument (e.g., instrument, locative, or affectee) can be explained under the proposed analysis, given the fact that the non-agentive interpretation of an applied argument is not random. Given that a single morpheme in Korean (i.e., -I morpheme) can express the meaning of causee or affectee (Kim, 2011), the argument can be interpreted according to the type of construction in which it is found. However, this may not be the case in other languages (e.g., Kinyarwanda) where a different morpheme marks different meanings of applied arguments. I leave this issue for future research.

[19]Although it would be interesting to see how non-agentive arguments introduced by (high) Appl can be subclassified, this is beyond the scope of this chapter.

that high Appl denotes a certain thematic relation between a DP in its specifier and an event in its complement. However, it is neither discussed nor argued what that thematic relation is. Based on the examples and the proposal for high Appl discussed by Pylkkänen, it appears that this relation is non-agentive.

A similar suggestion is found in Cuervo (2003). Cuervo proposed that an unintentional causer in Spanish (13) is introduced by high Appl. Although not explicitly mentioned, high Appl also seems to be non-agentive in the examples, such as (13).

(13) Al tintorero se le quemaron los pantalones de Carolina
the dry-cleaner.DAT se CL.DAT burnt.PL the trousers of Carolina
'The dry-cleaner (accidentally) burnt Carolina's trousers.'

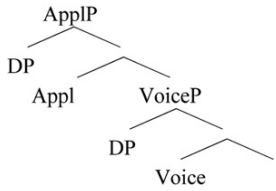
What is *lacking* in these previous studies is the idea that the semantics of high Appl is distinct from that of Voice and that it is non-agentive. As Korean morphological causatives suggest, a high applied argument is not a full-fledged-agent, unlike agents introduced by Voice. In Niuean, a high applied argument under causatives also cannot be modified by agent-oriented adverbs (Gould, Massam, & Patchin, 2009). This conforms to the current proposal that a high applied argument is not agentive. Hence, the proposed analysis provides a new argument in favor of distinguishing high Appl and Voice as two semantically different types of external argument-introducing heads.

3. VOICE AND APPL ARE SYNTACTICALLY DIFFERENT

High Appl is argued to introduce a DP external to the event, in a manner similar to Voice (Pylkkänen, 2008), as mentioned in Section 1.1. Nevertheless, they have been argued to merge in specific positions: high Appl merges below Voice (see (1b)) and never above. This claim suggests that a configuration where an event-related applicative head merges *above* Voice (14) is ungrammatical.[20]

However, I show that this configuration is possible in natural language, by presenting evidence from English, Georgian, and Zulu. I argue that Voice and Appl merge in structurally different positions, as in (1b) (for high Appl) and (14) (for peripheral Appl).

(14)



[20]Although no particular evidence for this claim has been provided, the claim appears to be based mainly on the asymmetric c-commanding relation between agents and applied arguments.

3.1. English experiencer have

Have in English can be used in a number of contexts, such as causative, experiencer, and possessive constructions (e.g., Belvin, 1996). This section examines the argument structure of the experiencer use of *have* with bare infinitival complements, as illustrated in (15):[21]

(15) a. John$_1$ had$_{exp}$ [Mary punch him$_1$ on the nose]
b. John$_1$ had$_{exp}$ [Mary walk out of his$_1$ classroom].
c. John$_1$ had$_{exp}$ [Mary step on his$_1$ foot].

For experiencer *have* (14), the complement of *have* is verbal (Cowper, 1989; Ritter & Rosen, 1993, 1997). The question arises as to what type of verb phrase that is. I argue that the phrase in question is VoiceP.[22] That is, the complement of *have* is agentive.

Harley (1998) argues that the complement of English experiencer *have* is non-agentive. She shows that the interpretation of the entire *have* construction relies on the interpretation of the complement of *have*, as noted by Belvin (1993). She uses pseudoclefts and progressive aspects, which are only compatible with eventive predicates, to test the eventiveness of *have*. Ritter and Rosen (1997) also use similar tests. Examples are given in (16).

(16) a. Pinocchio$_1$ had Geppetto step on him$_1$.
b. *What Pinocchio$_1$ did was have [Geppetto step on him$_1$].
(causative reading is ok; no experiencer reading is available).
(Harley, 1998)

The ungrammaticality of (16b) with an experiencer reading suggests that the experiencer *have* is stative, rather than eventive. The same tests can also be used with passive participle, progressive participle, PP, and adjective phrase complements. Passive participle complements show the same results as in (16), while the other types of complements are not compatible with either reading (see Harley, 1998 for details). This suggests that both causative and experiencer *have* are stative with those complements. Harley concludes that only bare infinitives and passive participles can denote events; thus, a causative

[21] *Have* in experiencer constructions can take various types of complements — bare infinitives, progressive participles, passive participles, adjective phrases, and prepositional phrases (Harley, 1998). This chapter does not pursue an analysis of these types of complements of *have* in experiencer constructions. See Kim (2012a) for a discussion of how other types of complements can be explained in terms of applicative structures.

[22] Experiencer *have* can occur with unaccusatives, as in (i).

(i) John$_1$ had$_{exp}$ [Mary die on him$_1$].

The peripheral Appl argued for in this chapter denotes a relation between an entity and an event, but it does not place any restrictions on the type of verbal event. I propose that in English peripheral Appl can appear with unaccusative *v*P, similar to Georgian (see Section 3.2).

reading is available with these complements. In contrast, an experiencer reading is unavailable with bare infinitive and passive participle complements for the same reason.

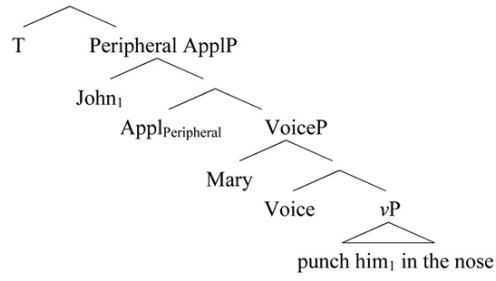
Thus, Harley argues that the entire eventiveness of *have* is inherited from the eventiveness of its complement. Assuming Harley (1995), eventiveness is represented structurally by little *v*, which merges above VP. Importantly, *v* introduces an agent in its specifier.[23] Since experiencer *have* with bare infinitival complement is stative, Harley proposes that in experiencer constructions its complement phrase is a VP without an agentive *v*P. In other words, experiencer *have* is stative, since its complement is stative.

However, contradictory to Harley (1998), the complement of an experiencer *have* construction is *fully* agentive (17). The argument 'Mary' in (15), which is the subject of the complement of experiencer *have*, can be modified by an agent-oriented adverb, but the experiencer 'John' cannot. Contrary to Harley's predictions, these examples suggest that the interpretation of experiencer *have* is stative, even though the complement of experiencer *have* is agentive (17).[24] In Harley's analysis, the contrast shown in (17) is unaccounted for.

(17) a. John_1 had_{exp} Mary_2 walk out of his_1 classroom on purpose$_{*1/2}$
b. John_1 had_{exp} Mary_2 punch him_1 in the nose on purpose$_{*1/2}$
c. John_1 had_{exp} Mary_2 step on his_1 foot on purpose$_{*1/2}$

Based on the data in (17), I argue that the complement of experiencer *have* is agentive, and the subject of the complement of experiencer *have* is introduced by Voice, as illustrated in (18).[25]

(18)



[23]Note that this differs from what is assumed in this chapter.

[24]It was suggested by a reviewer that an experiencer reading of (17) is difficult to obtain, and may be facilitated by adding 'on him' to (17a), and changing the adverb 'on purpose' to 'purposefully' to avoid having two 'on' phrases, as in 'John_1 had Mary_2 purposefully$_{*1/2}$ walk out of his_1 classroom on him_1.' However, none of my English consultants had difficulty obtaining the experiencer reading with the examples in (17). Regardless, this does not undermine the current proposal that the embedded argument of experiencer *have*, 'Mary' is agentive, unlike the experiencer 'John'.

[25]I argue that *have* is the realization of both *v* and Appl in various interpretations of *have*. (See Kim, 2012a for further details.)

The experiencer subject is non-agentive, as the adverb modification facts in (17) show. I argue that the experiencer in English *have* constructions is introduced by Appl, as in (18), assuming that Appl is non-agentive, based on the discussion in Section 2. In particular, Appl in (18) is *peripheral* Appl; it is the highest argument-introducing head under T. A peripheral applied argument in English experiencer *have* is not a topic, unlike affectees in Bulgarian and Slovenian, which are argued to be introduced by Appl in the CP domain (Rivero, 2009). I argue that it becomes a subject by moving into the specifier of TP, as the agreement facts in (19) show. A 3rd person singular peripheral applied argument agrees with the verb in the present tense.

(19) He_1 has/*have Mary punch him_1 in the nose.

An important contribution of this section to the current applicative theory is that there is another type of applicative, peripheral Appl, which merges directly below T and above VoiceP. It is semantically similar to Pylkkänen's high Appl in denoting a relation between an entity and an event: I argue that peripheral Appl denotes a non-agentive relation between an argument in its specifier and an event described by its complement. For example, in (18), peripheral Appl denotes an affectee relation between 'John' and the event 'Mary's punching him_1 in the nose.' Importantly, however, it is syntactically different from high Appl in that it can merge above VoiceP. Consequently, a peripheral applied argument displays the typical properties of a subject, unlike applied arguments introduced by high ApplP, which display object-like properties (e.g., Baker, 1988; Bresnan & Moshi, 1993). One can ask the question of how peripheral Appl and Appl can be distinguished if VoiceP is not present. I propose that they can be distinguished according to whether they pattern with subjects or objects — peripheral applied arguments pattern with subjects, high applied arguments pattern with objects (see Kim, 2012b for further details). In the following section, I provide evidence for this distinction based on the properties of malefactives in Georgian.

3.2. Morphological evidence to peripheral Appl

Georgian malefactive construction (20) provides further support for the peripheral Appl analysis of experiencer *have*. In Georgian, malefactives similar to English experiencers are introduced by an applicative morpheme (McGinnis, 1997).

(20) deideb-s nino da-e-mal-a-t
aunts-DAT Nino. NOM PFX-APPL+V-hide-AOR-PL
'The aunts_1 had Nino hidden on them_1.'

In (20), the morpheme *e* results from the merger of the applicative morpheme *a* and the unaccusative verbal morpheme *i* (McGinnis, 1997). The argument,

'Nino', despite being animate, is not an agent. Rather, it is a theme of the unaccusative verb 'hide'. What is important to the present discussion is the fact that malefactive constructions in Georgian provide morphological evidence for the peripheral Appl proposal. In (20), the malefactive argument 'the aunts', similar to an experiencer in English, is the last element introduced in the clause as it is structurally higher than the theme argument 'Nino'. In addition, it is introduced by (peripheral) Appl.[26] The dative argument merges higher than the nominative theme object in (20). Evidence can be found in the binding facts in the language. The possessive reflexive pronoun *tavis* in Georgian can be bound by an argument in a higher A-position (Harris, 1981). The dative argument can bind *tavis* in nominative position (21a), whereas the nominative argument cannot bind *tavis* when it is in a dative position (21b). This indicates that dative arguments merge higher than nominative arguments in malefactive constructions. That is, dative arguments are closer to T than nominative arguments.

(21) a. deideb-s tavis švileb-i da-e-mal-a-t.
aunts-DAT self son-NOM PFX-APPL+V-hide-AOR-PL
'The aunts$_1$ had$_{exp}$ their$_1$ son hidden on them$_1$.'

b. *tavis deideb-s nino da-e-mal-a-t.
her aunt- DAT Nino-NOM PFX-APPL+V-hide-AOR-PL
'[Her$_1$ aunt]$_2$ had$_{exp}$ Nino$_1$ hidden on her$_2$.'

(McGinnis, 1997)

Like peripheral applied arguments in English, a malefactive in Georgian patterns with subjects. In Georgian, a third person nominal triggers number agreement only if it is a subject (22b) (Harris, 1981), and such agreement is found with malefactives (22a) (McGinnis, 1997). Thus, we can conclude that the Appl in Georgian is peripheral Appl, and not high Appl.

(22) a. deideb-s Nino-i da-e-karg-a-t
Aunts-DAT Nino-NOM PFX-APPL+ UNACCU-lose-AOR-PL
'The aunts had$_{exp}$ Nino lost on them.'

b. Bavšveb-i da-i-karg-nen
Children-NOM PFX-UNACCU-lose-AOR.3PL
'The children are lost.'

(McGinnis, 1997)

Interestingly, there is further morphological support for the peripheral Appl proposal. It comes from Zulu, a Bantu language of the Nguni cluster spoken primarily in South Africa (especially the southeastern provinces of KwaZulu and Natal). Zulu has a locative applicative construction where a locative applied DP merges above an agent (Buell, 2005). In (23), the locative DP 'the school' precedes the agent DP 'the children'.

[26]In Georgian, malefactives are possible only with unaccusatives (McGinnis, 1997). In other words, Georgian does not allow malefactives with transitives, unlike English (17).

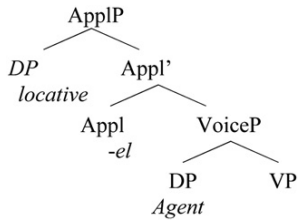
(23) [I-7-sikole]DP si-fund-el- a a-bantwana
7-7.school 7 SBJ-study-APPL-FV 2-2.child
Lit. 'The school studied at the children.' ('The children studied at school'.)
(Buell, 2005)

Using evidence from word order (SVO), subject agreement, and binding, Buell argues that locative applied DPs in Zulu are indeed subjects that merge above agents.[27] For example, a locative applied DP can bind an agent, as illustrated in (24).[28]

(24) [I-7-sikole]DP ngasinye$_1$ si-fund-el- a a-bantwana ba-so$_1$
7-7school 7.each 7 SBJ study-APPL-FV 2- 2.child 2.of-7.it
Lit. 'Each$_1$ school studies at its$_1$ children'. ('Each$_1$ school is studied at by its$_1$ children'.)

Based on these properties of locative applied arguments in Zulu, the structure in (25) is proposed for locative applicative constructions such as (23) where an applied argument is a DP 'the school'.[29] The Appl in (25) is similar to peripheral Appl in that it merges above VoiceP and its argument patterns with subjects. Thus, Zulu provides clear morphological evidence for the peripheral Appl proposal, since the applicative morpheme *-el* is visible.

(25)



Zulu locative applicatives indicate that the peripheral Appl proposal is not restricted to English and Georgian, but also relevant for Bantu languages, where applicatives are productive. Moreover, the fact that a locative argument is a peripheral applied argument in Zulu suggests that we cannot distinguish peripheral Appl and high Appl in terms of the semantics of arguments, since locative arguments can also be high applied arguments in languages such as Bantu (e.g., Baker, 1988).

[27]Buell also discusses other properties specific to Zulu that suggest that the locative DP is a subject.

[28]The agent cannot bind the locative DP in (24) (Buell, p.c.). In contrast to locative applied arguments, agents pattern with the properties of objects (see Buell, 2005 for details).

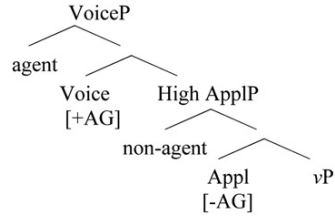
[29]I modify the structure proposed by Buell to fit the current context (e.g., using VoiceP instead of *v*P), but the core elements of the structure remain the same.

4. VOICE AND APPL ARE NOT FLAVORS OF ONE ANOTHER

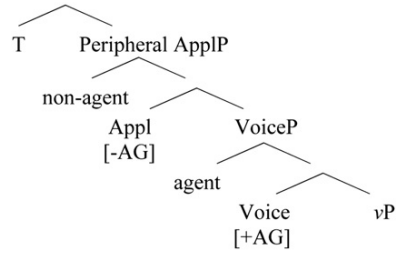
It has been argued that event-related applicative heads, high Appl and peripheral Appl, are semantically different from Voice. Furthermore, the Appls are syntactically different from Voice; they merge in different positions.

In Section 2, it was argued that high Appl and Voice are *semantically* different (26). An argument introduced by Voice is agentive, whereas arguments of Appls are non-agentive. Section 3 argued that there is another type of applicative head, namely peripheral Appl, shown in (27), which is syntactically different from high Appl in Pylkkänen (2008). Peripheral Appl can merge above VoiceP, unlike high ApplP, as shown in (27).[30] It was also shown that peripheral Appl is non-agentive, similar to high Appl.

(26)



(27)



Leaving aside the issue of two different Appls merging either below or above Voice, the resulting structures (26)-(27) proposed in Sections 2 and 3 suggest that there are two different external argument-introducing heads, Voice and Appl. This raises an important question: Are two different argument-introducing heads necessary? The same question can be asked for the Appl proposal in Pylkkänen (2002, 2008), which argues for high Appl and Voice as two different external argument-introducing heads. It could be the case that different semantic features on a single head, either Voice or Appl, can be used

[30]There would be three distinctive positions external to *v*P, when the heads, Voice, peripheral Appl, and high Appl, co-occur. Voice and high Appl can co-occur, as shown in Section 2, and peripheral Appl and Voice can co-occur, as shown in Section 3. It has been shown that peripheral Appl and high Appl can co-occur in adversity passives in Korean (Kim, 2012b). In principle, all the heads are predicted to be able to co-occur, although I have not found any such examples yet.

to account for the data. In other words, why not have Appl as a slightly different flavor of Voice or Voice as a different flavor of Appl? The most obvious answer is that there is an asymmetric relation (see Sections 2 and 3) between the arguments of Appl and Voice, which suggests that they merge in different positions.

In this section, I provide morphological data which suggest that Appl and Voice are semantically and syntactically different. Thus, I argue that Appl cannot be a flavor of Voice or vice versa. The data to be discussed also confirms that the semantics of Appls is different from Voice, as stated previously (Sections 2 and 3).

In Georgian, non-agentive and agentive arguments have different morphology. The presence of an applicative morpheme in malefactive constructions such as (20) indicates that the action described by the verb is non-intentional (Harris, 1985): the dative subject is incompatible with an intentional adverb such as 'on purpose', as shown in (28). The morpheme can mark other types of non-agentive arguments in the language, such as experiencers, as illustrated in (29).

(28) deideb-s nino (*gangeb) da-e-mal-a-t
aunts-DAT Nino. NOM on purpose/willingly PFX-APPL+V-hide-AOR-PL
'The aunts had Nino hidden on them (*on purpose/willingly).' (Léa Nash, p.c.)

(29) Gela-s u-qvar-s Nino
Gela-DAT APPL-love-3PRE.PL Nino.NOM
'Gela loves Nino.' (Harris, 1981)

The contrast between these arguments and agentive arguments in simple transitives (30) further supports the notion that the applicative morpheme marks non-agentive arguments. The nominative subject in a simple transitive (30) is agentive, as its compatibility with the agent-oriented adverb *gangeb* 'on purpose' indicates, and the verb in (30) is not marked with an applicative morpheme.

(30) Nino tavis deida-s gangeb akeb-s
Nino. NOM self's aunt-DAT on purpose/willingly praise-PRES
'Nino is praising her aunt on purpose/willingly.'

Similar morphological evidence is found in certain Bantu languages, such as Kindendeule, a Southern Tanzanian Bantu language. In this language, an applicative morpheme can be used with any type of verb to mark all types of semantic roles, *except* agents, as illustrated in (31) (Ngonyani, 1998).

(31) a. yeso a-ki-ba-hwel-e ba-ndu b-ɔha Benefactive
Jesus 1-PAST-2-die-APPL 2-person 2-all
'Jesus died for all people.'

b. mw-anan a-ki-m-butuk-i mayi-mu-ndu Goal
1-child 1-PAST-1-run-APPL 1.mother-1-person
'She ran to her mother.'

c. a-ki-n-hyɔm-ɛ Yuda Malefactive/Goal
1-PAST-1-be angry-APPL Judas
'He was angry with Judas.'

d. a-ki-tyang-I hi-latu Instrumental
1-PAST-walk-APPL 8-shoe
'He walked with shoes.'

e. a-ki-hyɔm-ɛ ma-ligɔ Reason
1-PAST-be angry-APPL 6-insults
'He got angry because of the insults.'

f. yesu a-ki-hwel-e ku-Gɔlgɔta Locative
Jesus 1-PST-die-APPL 15-Golgota
'Jesus died at Golgotha'

g. ba-ki-lɔngɛl-ɛ mi-haru Theme
2-PAST-talk-APPL 4-issue
'They talked about the issues.'

(Ngonyani, 1998)

When we contrast the simple transitive in (32) with the examples in (31), we see that the nominative subject in (32) is agentive, and the verb in (32) is not marked with an applicative morpheme, whereas the non-agentive arguments in (31) are. This suggests that the applicative morpheme cannot be used to introduce agents.

(32) John a-li-m-pig-a Mary kwa makusudi
John he-PAST-her-hit-FV Mary by purpose
'John hit Mary on purpose.' (Deo Ngonyani, p.c.)

A similar conclusion can be drawn from Spanish unintentional responsibility constructions (33). An applied argument receives a morphological marker distinct from that of an agent, namely dative case. The dative argument 'dry-cleaner' is interpreted as the argument with unintentional responsibility for the event described by the verb phrase, the causative event of trousers getting burnt. It is proposed that the dative argument is introduced by Appl that takes an event as a complement (Cuervo, 2003).

(33) Al tintorero se le quemaron los pantalones de Carolina
the dry-cleaner.DAT se CL.DAT burnt.PL the trousers of Carolina
'The dry-cleaner (accidentally) burnt Carolina's trousers'

(Cuervo, 2003)

An important property of the dative argument is that it is not compatible with an agent-oriented adverb or a purpose phrase (34a), in contrast to the nominative-marked subject in (34b).

(34) a. Al tintorero se le quemaron los pantalones de Carolina
the dry-cleaner.DAT se CL.DAT burnt.PL the trousers of Carolina
(*a propósito/para vengarse)
(on purpose/to take revenge).
'The dry-cleaner burnt Carolina's trousers (*on purpose/ to take revenge)'

b. El tintorero quemó los pantalones de Carolina a propósito/para vengarse
the dry-cleaner.NOM burnt.SG the trousers of Carolina on purpose/to take revenge.
'The dry-cleaner burnt Carolina's trousers on purpose/to take revenge'

The syntactic distinction between an agent and a non-agent, such as an applied argument, is particularly evident when both an agent and an applied argument are present at the same time, as in Korean morphological causatives (35). In (35), the agent 'Mother' and the applied argument 'the child' co-occur and are marked with different case markers, demonstrating that they occupy different syntactic positions.

(35) emma-ka ai-eykey chayk-lul ilk-hi-ess-ta
mother-NOM child-DAT book-ACC read-I-PAST-DEC
'Mother made the child read the book.'

In fact, Pylkkänen's (2008) applicative structure (1b) for sentences such as (1a), repeated here as (36), is compatible with the distinction between Appl and Voice argued for throughout this chapter, although she does not explicitly discuss this semantic distinction between Appl and Voice. The agent 'Mavuto' in (36) does not need a separate (argument-changing) morpheme, in contrast to the applied argument 'knife', which is introduced by an applicative morpheme that attaches to the verb. Importantly, in Pylkkänen's analysis, this morphological difference, between an agent and an applied argument, is represented by different heads: agents are introduced by Voice, whereas non-agentive arguments, such as applied arguments, are introduced by Appl.

(36) Mavuto a-na-umb-ir-a mpeni mtsuko
Mavuto SP-PAST-mould-APPL-ASP knife waterpot
'Mavuto molded the waterpot with a knife.'

The morphological distinction presented in this section not only supports the proposal that Appl and Voice are semantically distinct, but also provides evidence that the two heads are *syntactically* distinctive heads, as argued for in this chapter.

5. CONSEQUENCES

The existence of two syntactically and semantically different external argument-introducing heads provides support for the (various forms of) configurational theories (Baker, 1988, 1997, 2003; Borer, 2005; Hale & Keyser, 1993)

where different thematic roles are predicted to appear in different syntactic configurations.

Configurational approaches predict that an agent and a non-agent will appear in different syntactic configurations. For example, an agent appears in the specifier of a VP that takes another lexical VP as its complement, whereas a theme appears in the complement of a lower VP (Hale & Keyser, 1993). Keeping in line with the insights of configurational approaches, I argue that the configuration that is needed for the case in discussion can be expressed as a correspondence between a particular thematic role and a particular head. In addition, in line with featural approaches (Folli & Harley, 2005; Kallulli, 2007), where various features of a head can accommodate arguments of various semantic types, I argue that the particular head, for example, Voice or Appl, bears a certain semantic feature, as shown in (37):

(37) a. Voice [+AG] b. Appl [−AG]

As predicted by configurational approaches, an argument that merges as the specifier of Voice [+AG] is an agent, whereas an argument that merges as the specifier of Appl [−AG] is a non-agent. Furthermore, these heads merge in different syntactic positions (see (1b) and (3); also see footnote 30 for further discussion). Appl is merged either above or below Voice, which captures the asymmetric c-commanding relation between the arguments introduced by each head.

6. CONCLUSION

In this chapter, it has been shown that Voice and Appl are two distinctive heads, although both introduce an argument external to *v*P. In particular, they merge in different structural positions and hold different semantic content: [+AG] vs. [−AG].

Having two different external argument-introducing heads supports configurational approaches. In particular, it expands the UTAH-type (Baker, 1988, 1997) correspondence between the thematic role of an argument and its structural position by attributing semantic content to the functional heads Voice and Appl. That is, Appl and Voice impose agentivity restrictions on the external argument. In this sense, we may still need these lexical-like properties (i.e., semantic properties) in characterizing the functional head. Thus, it does not seem to be the end of argument structure. Rather, it remains to be seen to what extent syntax can make use of semantic properties in order to account for argument structure.[31]

[31]A related question is how features on functional heads should be specified. For example, with respect to agentivity, should it be specified as [+AG] on Voice and [−AG] on Appl, should it be

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unspecified on both heads, or can the agentivity feature be derived from some other property of the heads? If heads are unspecified for the features, the semantics of the heads may be inherent in the semantics of their arguments; for instance, Appl gets [−AG] if its argument is non-agentive, such as a beneficiary. Restrictions on feature specification may differ across languages. As discussed in footnote 5, in English, the Voice head may be unspecified for agentivity, since it allows both agentive and non-agentive arguments in the same position. In contrast, for languages like Korean, feature specification may be required, since agents and non-agents appear in different positions. As this is beyond the scope of the present chapter, I leave this issue for future research.

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7

TOWARD THE END OF ARGUMENT STRUCTURE

Terje Lohndal

ABSTRACT

The goal of this chapter is to discuss a range of arguments against the widespread assumption that verbs take thematic arguments. The arguments are based on facts involving, among other things, distributive readings and variable verbal adicity. The chapter argues that there are few convincing arguments that verbs take thematic arguments. In particular, it deals with claims based on idioms and argues that these do not undermine the claim that verbs do not take thematic arguments. Possible consequences for the syntax-semantics interface are discussed, and it is claimed that the mapping should rely on the functional structure of the sentence. This chapter offers a comprehensive overview and discussion of many well-known facts, and a new way of looking at these facts and their implications for the syntax-semantics interface.

Keywords: Adicity, interface, Neo-Davidsonian, Spell-Out, thematic separation

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1. INTRODUCTION

Most linguists learn at some point that verbs take arguments. There are transitive and intransitive verbs and the difference is roughly speaking whether verbs take two arguments or just one argument. This property has been taken to be theoretically significant and has played a rather important role in generative grammar as well as in other grammatical frameworks. In essence, the idea is that the verb encodes a propositional shell in the sense that the verb is a full sentence in disguise — following a tradition going back at least to Frege. In generative grammar, theoretical principles such as the Theta Criterion capture the adicities that verbs have by requiring that the verb's arguments be present in the syntactic structure. The view is that the adicities of a verb are part of the verb's meaning and that the latter in part determines the realization of arguments. As stated by Levin and Rappaport Hovav in their comprehensive overview of argument realization: 'We have emphasized that not only is the structural facet of meaning relevant to argument realization generalizations, but so is the root [. . .]' (Levin & Rappaport Hovav, 2005, p. 238), where the root is the idiosyncratic properties of a verb. The current paper aims to show that this may not be true as far as the grammar is concerned.

The traditional view where all the verb's arguments are part of the lexical specification of the verb has been challenged in recent years. In particular, Schein (1993) and Kratzer (1996, 2000) argue that external arguments or Agents should be severed from the verb, that is, not be part of the lexical specification of the verb.[1] Schein and Kratzer, however, disagree on whether internal arguments or Themes should be severed as well. The goal of the present paper is to take steps toward resolving the debate. I will argue that there are cases that support the claim that verbs do not take thematic arguments. If that is the case, it raises questions about the syntax–semantics interface. I will provide a preliminary discussion of these questions.

The paper is organized as follows. Section 2 presents a range of arguments against verbs taking thematic arguments. Section 3 deals with a particular counterargument, namely that of idioms. In Section 4, some of consequences of the present view are discussed before Section 5 concludes the paper.

2. ARGUMENTS AGAINST LEXICAL ADICITIES

In this section, I will present a series of arguments supporting the view that verbs do not take thematic arguments. The arguments will take the following form: They will show that Neo-Davidsonian logical forms, what I will refer

[1]Similar claims have been advanced in nongenerative frameworks such as Construction Grammar (Goldberg, 1995, 2006). Here I will not discuss this literature.

to as full thematic separation, are the correct logical forms for certain data. These logical forms presuppose that verbs only take an event variable and that they do not take other arguments.[2]

In the postscript to their book, Levin and Rappaport Hovav state the following, which is worth quoting at length:

> In chapter 1 we stressed the importance of isolating the "grammatically relevant" facets of verb meaning. Most linguists take this type of meaning to be what we characterized as the "structural" components of verb meaning. How does this convergence fit in with our repeated assertion that the semantics of the root is important to many facets of argument realization? We suggest that the basic mapping from event structure to syntax is indeed governed by a relatively small set of semantic notions: the grammatically relevant facets of meaning expressed in an event structure. However, the semantics of the root determines the range of event structure a particular verb is associated with, the distribution of semantic cases, and the compatibility of a verb with particular modes of information-packaging.
>
> It is perhaps fitting to conclude this book with the observation that the lexical semantics of the root determines in many complex ways different facets of argument realization. This observation is worthy of note in light of a recent trend towards shifting the burden of explanation to extralexical factors. Although such factors are clearly present, the recognition that lexical semantic factors are still very relevant affirms research programs that pay close attention to the lexical semantics of verbs, despite the notoriously elusive nature of word meaning. (Levin & Rappaport Hovav, 2005, p. 241)

Many researchers have argued that properties of the verb influence or even determine how the verb's arguments are realized. However, in the present paper I present arguments against this view.[3] There have been a number of such arguments in the literature, as Levin and Rappaport Hovav mention; see Krifka (1989, 1992), Parsons (1990, pp. 96–99), Schein (1993, 2003, 2011), Gomeshi and Massam (1994), Ritter and Rosen (1996), Herburger (2000), Baker (2003), Borer (2005a, 2005b), Marantz (2005), Williams (2005, 2008), Pietroski (2007), Boeckx (2010) and Cuervo (2010) for the verbal domain and Barker (1998) for the nominal domain. Here I focus on a few of these arguments, namely the ones presented by Parsons, Schein, Herburger, and Pietroski. These arguments have never been gathered together in one place before so I think it will be useful to do that. Special attention will

[2]See Davidson (1967), Parsons (1990), Lasersohn (1995), Bayer (1996), Rothstein (1998), Landman (2000), and Tenny and Pustejovsky (2000) for a summary of the traditional arguments in favor of events.

[3]An initial reason for thinking that this is the case is provided by the three verbs *eat*, *dine*, and *devour*. These verbs all have roughly the same meaning, but quite different subcategorization requirements: *eat* is optionally transitive, *dine* is intransitive, and *devour* is obligatorily transitive. Thanks to Lucas Champollion (p.c.) for reminding me of this.

be devoted to the issue of whether Themes should be severed from the verb's argument structure or not.[4]

It is worth emphasizing that the present approach does not suggest to dispense with the event argument. I will return to some more discussion of this below.

2.1. Davidsonian versus Neo-Davidsonian Representations

Let us start by briefly reviewing the history of the relevant literature.

Davidson (1967) suggests that an event variable is crucial to the representation of verbal meaning. Concretely, he suggests the representation in (2) for (1).

(1) Jones buttered the toast.
(2) ∃e[buttering(e, Jones, the toast)]

Example (2) says that there are events of buttering of which John is the Agent and the toast is the Theme. Davidson argues that these event representations are well suited to capture important entailment relations. Consider the examples in (3)–(7).

(3) Jones buttered the toast.
(4) Jones buttered the toast slowly.
(5) Jones buttered the toast slowly in the bathroom.
(6) Jones buttered the toast slowly in the bathroom with a knife.
(7) Jones buttered the toast slowly in the bathroom with a knife at midnight.

In these examples, (7) entails (3), (4), (5), and (6); (6) entails (3), (4), and (5); and (5) entails (3) and (4); (4) entails (3). This follows straightforwardly if there is an event variable common to all the modifiers. The modifiers can then be linked by conjunction, in which case the entailments would follow as a natural consequence of conjunction reduction.

(8) ∃e[buttering(e, Jones, the toast) & Slow(e) & In(e, the bathroom) & With(e, a knife) & At(e, midnight)]

Immediately after Davidson presented the proposal in (2), Castañeda (1967) argued that the thematic arguments could be severed from the verb. That is, (2) could rather be repre sented as in (9), where thematic relations are independent two-place predicates.

(9) ∃e[buttering(e) & Agent(e, Jones) & Theme(e, the toast)]

[4]Bayer (1996) presents a very long discussion of whether Neo-Davidsonian representations are better than Davidsonian logical forms. He concludes that they are not. Most of the issues I discuss below are not discussed by Bayer or discussed inadequately (like his discussion of Schein, 1993), so I will not engage in a detailed rebuttal of Bayer's claims in this paper.

This is the Neo-Davidsonian proposal that Parsons (1990) takes up and develops in great detail (see also already Bartsch, 1976; Carlson, 1984; Higginbotham, 1985, 1986; Krifka, 1989, 1992; Taylor, 1985). Dowty (1989) calls (2) the "ordered-argument" method and (9) the "neo-Davidsonian" method.[5]

Note that the original Davidsonian proposal lumped the event argument and the thematic arguments together at logical form. As I will argue, it is a virtue of the Neo-Davidsonian proposal that a distinction between the event argument and the thematic argument(s) is introduced. On a Neo-Davidsonian approach, verbs are monadic in the sense that they only have a single argument, namely the event argument. This offers a way to classify verbs in the sense that one can say that the event argument is what makes a lexical item a verb, though note that this requires that one insists that verbs and their corresponding gerunds are not synonyms (pace e.g., Parsons, 1990). I will not take on that task in this paper, as the goal is not to discuss the question of what makes a verb a verb.

It is important to point out that what both Davidson and Parsons call "logical form" is not the same as the notion of logical form that syntacticans use, i.e., Logical Form, which is a syntactic level of representation (cf. May, 1977, 1985). As Hornstein (2002, p. 345) points out, the "conception of LF is analogous (*not* identical) to earlier conceptions of logical form (or logical syntax) [...] found in the work of philosophers like Frege, Russell, Carnap, and Strawson." In many ways, Davidson's and Parson's logical forms are more like semantic or conceptual structures. Kratzer (1996, p. 110) cites Parsons (1993) saying that the theory in Parsons (1990) is a "proposal for the logical forms of sentences, unsupplemented by an account of how those forms originate by combining sentence parts." On such a theory, one can for example argue that there is ordered argument association in the syntax and in conceptual structure, or one can argue that there is ordered argument association in the syntax but neo-Davidsonian association in conceptual structure. Yet another option is to argue that there is neo-Davidsonian association both in the syntax and conceptual structure. The latter is Schein's project (Schein, 1993, p. 11), as I will illustrate in detail below. One can also take intermediate positions, as Kratzer (1996) does, where only the Agent is severed in the syntax (Kratzer is explicitly agnostic about conceptual structure). This issue will play an important role in the present chapter, and I will return to a more comprehensive discussion below.

2.2. Severing the Agent

Schein (1993) pushes the Neo-Davidsonian idea and puts forward arguments to show that we need the representation in (9), a representation that he refers to

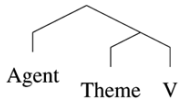
[5]Since Gruber (1965) and Jackendoff (1972), there has been a lot of discussion of what the appropriate thematic roles are. See Dowty (1991) for arguments that we can only define prototypical roles, and Schein (2002) who argues against this.

as full thematic separation. Schein's project is to argue that lexical decomposition is not sufficient. This is different from what Parsons (1990) argued, since Parsons would be happy if all decomposition is assigned to the lexicon. That is, we could stipulate the meaning postulate in (10) and this would suffice for him. (10) shows that a verb has lexical adicities in the grammar but that the lexical entry is interpreted such that the verb does not have lexical adicities.

(10) 'V(e, F, G)' is true $\leftrightarrow \forall x(\text{Agent}(e, x) \leftrightarrow Fx) \wedge V^{*}e \wedge \forall x(\text{Theme}(e, x) \leftrightarrow Gx)$ (Schein, 1993, p. 9)

Schein (1993, p. 10) says that "The argument for a radical decomposition is an argument that decomposition enters into the logical syntax." The project is then to argue that (10) is not sufficient. The way Schein makes this argument is to put a Theme in between the Agent and the verb. If the Agent is not lexically represented on the verb, but rather introduced by structure separate from the verb, the Agent can be the agent of an event that is not that of the verb. A graphical depiction is given in (11).

(11)



Schein introduces such a case involving a distributive quantifier as the Theme. Such a Theme may induce a mereological partition relation between the event of Agent and the event of the verb. Importantly, though, in this case no substantive verbal meaning is added. There is not a substantial semantic relation to the event of the verb, as, e.g., a causative would contribute, but simply the mereological relation. In order to make this clearer, let us see why a mereology of events is needed on a Neo-Davidsonian approach.

Consider the data in (12)–(13), from Schein (1993, p. 7).[6]

(12) Unharmoniously, every organ student sustained a note on the Wurlitzer for sixteen measures.

(13) In slow progression, every organ student struck a note on the Wurlitzer.

Schein argues that the reading for (12) where each student is related to a note on the Wurlitzer, that is, for each to have an event of his own, the quantifier must include a quantifier of events within its scope. Note that it is not the individual note that is unharmonious but the ensemble. Each of the students only plays a part in the larger action. There is no other way to get this reading, and the sentence would be false if, for example, one of the students keeps it going for eight measures and then another student does the other 8, as Schein observes. The same argument can be made for (13). The solitary events

[6]See Ferreira (2005) for more discussion of this issue.

performed by the students can only be related to the larger one as parts of the whole. Summarizing the mereological relation is encoded through a quantifier which includes the condition that *e'* is part of *e* ($e' \leq e$).

Now that we have seen why mereological relations are required, let us turn to the central data points. Schein's discussion centers around cases like (14)–(17). I will in what follows concentrate on (14).

(14) Three video games taught every quarterback two new plays.

Intended reading: "Between the three of them, the video games are responsible for the fact that each quarterback learned two new plays."

(15) Three agents sold (the) two buildings (each) to exactly two investors.
(16) Three letters of recommendation from influential figures earned the two new graduates (each) two offers.
(17) Three automatic tellers gave (the) two new members (each) exactly two passwords.

One may wonder why Schein adds the third NP *two new plays* in (14). The reason is that this eliminates the possibility that the crucial universal *every quarterback* in (14) denotes a group, e.g., *the quarterbacks*, in which case one could possibly analyze (14) as akin to *The games taught the quarterbacks*. In the example at hand, though, the universal has to denote a genuine quantifier since it has an indefinite that depends on it. The claim is that the mereological/part–whole relation among events ($e' \leq e$) connects quantification over quarterbacks and their solitary events to the larger event where three video games are the teachers (Schein, 1993, p. 8). So *every quarterback* and *three video games* are cumulatively related, but *every quarterback* also seems to behave like an ordinary distributive quantifier phrase in its relation to *two new plays*, as Kratzer (2000) makes clear. This creates the problem that Schein tries to solve.

Schein (1993, pp. 8 and 57) suggests a logical form for (14), namely (18), where *INFL* means the Agent event.[7]

(18) $\exists e(\text{teach}(e)$
$\wedge\ \exists e([\exists X\colon 3(X) \wedge \forall x(Xx \rightarrow Gx)]\forall x(\text{INFL}(e, x) \leftrightarrow Xx)$
$\wedge\ [\text{every } y\colon Qy]\ [\exists e' : e' \leq e](\forall z(\text{TO}(e', z) \leftrightarrow z = y)$
$\wedge\ [\exists Z\colon 2\ (Z) \wedge \forall z(Wz \rightarrow Pz)]\forall z(\text{OF}(e', z) \leftrightarrow Wz)))$

We can spell this out in plain(er) English as in (19)[8].

[7] A brief note about Schein's take on plurals, which is important for understanding his logical forms: A plural like *the As'* is a second-order description of a predicate: a predicate such that if it holds of *x*, *x* is an A. This means that *the cats* comes out as a definite second-order description:

(i) $\iota Y(\exists y Yy \wedge \forall y(Yy \leftrightarrow cat(y))$

[8] Brasoveanu (2010) and Champollion (2010) argue that event variables are not required in this logical form. Although they code the mereology differently, it is not clear that this is an argument

(19) There is an event *e*, and e is a teaching,
and a three-membered plurality *X* comprising only video games, such that for every *x*, *x* is an agent of *e* just if it is among those three in *X*,
and for every quarterback *y*, there is a part *e'* of *e*, such that the targets of the teaching are all and only the quarterbacks,
and there is a two-membered plurality *Z*, comprising only plays, such that the content of the teaching *e'* was all and only the plays of *Z*.

We see that the part–whole relation among events ($e' \leq e$) connects quantification over quarterbacks and their solitary events to the larger event where three video games are the teachers (Schein, 1993, p. 8). Notice that in the logical form above, the Agent and the Theme are scopally independent of each other and also of the verb. Here is what Schein says about the interpretation of (18).

(20) It is [...] essential to the meaning of [(14)] that the θ-role bound into by the subject not occur within the scope of other quantifiers, as in [(18)], and that the action of the three video games be related mereologically to what happened to the individual quarterbacks (Schein, 1993, p. 57).

Schein devotes a lot of time to showing that if *teach* is a polyadic predicate, we do not get the correct logical forms. That is, in (21), either the universal will be inside the scope of the plural, or the reverse, and all thematic relations will be within the scope of any quantifiers.

(21) $[\exists X\colon 3(X) \wedge \forall x(Xx \rightarrow Gx)]$ [every y: Qy] $[\exists Z\colon 2(Z) \wedge \forall z(Zz \rightarrow Pz)]$ $\exists e$ teach(X, y, Z, e) (Schein, 1993, p. 57)

As Schein points out, the problem for such polyadic logical forms is to find a meaning that relates individual objects to plural objects. From the point of view of entries such as (21), the difference between (14) and (22) is only a matter of scope. The logical form is given in (23).

(22) Every quarterback was taught two new plays by three video games.

(23) [every y: Qy] $[\exists Z\colon 2(Z) \wedge \forall z(Zz \rightarrow Pz)]$ $[\exists X\colon 3(X) \wedge \forall x(Xx \rightarrow Gx)]$ $\exists e$ teach(X, y, Z, e) (Schein, 1993, p. 58)

But the meaning of (14) is crucially different in ways that scope does not reflect. In (23), all the NPs related to plural objects occur in the scope of the

against having events in the logical forms, given the existence of many independent arguments for events (see, e.g., Parsons, 1990). So even if one were to grant that Schein's argument did not go through, there are still other arguments for events that to my knowledge have not been explained away.

quantifier over individual objects (*every quarterback*). This is different in (14) since one of these NPs has escaped, as Schein puts it. I will not go through all the other illustrations Schein provides of why polyadic predicates fail to give the correct meanings. Instead I refer the reader to Chapter 4 of his book for a comprehensive discussion.

Kratzer (2000) furthermore shows that it is technically possible to get around Schein's (1993) argument for severing the Agent. Here I will outline her argument and emphasize, as she does, what one has to buy in order to escape Schein's arguments. Kratzer uses the sentence in (24) and the goal is to derive the logical representation in (25). This logical form is simplified compared to that of Schein, but the simplification does not matter for present purposes.[9]

(24) **Three copy editors caught every mistake (in the manuscript)**

(25) $\exists e \exists x[3\text{ copy editors}(x) \wedge \text{agent}(x)(e) \wedge \forall y[\text{mistake}(y) \rightarrow \exists e'[e' \leq e \wedge \text{catch}(y)(e')]]]$

Kratzer makes the following assumptions:

(26)
a. Denotations are assigned to bracketed strings of lexical items in a type-driven fashion (Klein & Sag, 1985)
b. For any string α, $T(\alpha)$ is the denotation of α
c. Types: e (individuals), s (events or states; eventualities as in Bach, 1981), and t (truth-values)
d. Composition Principles: Functional Application and Existential Closure (for this example)

With these assumptions in hand, she provides the following derivation:

(27)
a. $\mathbf{T}(\textbf{every mistake}) = \lambda \mathbf{R}_{<e<st>>} \lambda e \forall y\ [\text{mistake}(y) \rightarrow \exists e'\ [e' \leq e \wedge \mathbf{R}(y)(e')]]$
b. $\mathbf{T}(\textbf{catch}) = \lambda \mathbf{Q}_{<<e<st>><st>>} \lambda x \lambda e\ [\text{agent}(x)(e) \wedge Q(\text{catch}_{<e<st>>}(e))$
c. $T(\textbf{catch}\ (\textbf{every mistake})) =$
$\lambda x \lambda e\ [\text{agent}(x)(e) \wedge \mathbf{T}(\textbf{every mistake})\ (\text{catch})(e)] =$
$\lambda x \lambda e\ [\text{agent}(x)(e) \wedge \forall y\ [\text{mistake}(y) \rightarrow \exists e'[e' \leq e \wedge \text{catch}(y)(e')]]]$
From (a), (b), by Functional Application.
d. $\mathbf{T}(\textbf{3 copy editors}) = \lambda \mathbf{R}_{<e<st>>} \lambda e \exists x[3\text{ copy editors}(x) \wedge \mathbf{R}(x)(e)]$
e. $\mathbf{T}(\textbf{3 copy editors}\ (\textbf{catch}\ (\textbf{every mistake}))) =$
$\mathbf{T}(\textbf{3 copy editors})(\lambda x \lambda e\ [\text{agent}(x)(e) \wedge \forall y\ [\text{mistake}(y) \rightarrow \exists e'[e' \leq e \wedge \text{catch}(y)(e')]]])$

[9] Kratzer assumes that plurals are complex individuals, following Link (1983), among others.

=
λe∃x[3 copy editors(x) ∧ agent(x)(e) ∧ ∀y [mistake(y) →
∃e'[e' ≤ e ∧ catch(y)(e')]]]
From (c), (d), by Functional Application.

f. ∃e∃x[3 copy editors(x) ∧ agent(x)(e) ∧ ∀y[mistake(y) →
∃e'[e' ≤ e ∧ catch(y)(e')]]]
From (e), by Existential Closure.

This derivation gets us the intended reading, without severing the Agent. Step (b) shows that all the arguments of **catch** are part of the lexical entry. Note, however, the price we have to pay to be able to do this: (1) A complicated semantic type for the direct object position of **catch** is needed, and (2) it is necessary to posit different argument structures for **catch** and "catch." Many semanticists, including Kratzer, argue that this is not a price we should be willing to pay, and she goes on to show that severing the Agent makes it possible to do without these two assumptions.

Notice that so far we have only seen a claim that Agents have to be fully severed from the verb. This is similar to the claims in Kratzer (1996) and Marantz (1997). In fact, Schein (1993) leaves open the possibility that "V(e) & Theme(e, x)" could be abbreviated "V(e, x)." Although the latter collapses verb and thematic role, the Theme argument *x* is still separated from any other nominal argument. Kratzer (2000) tries to replicate Schein's test for Agents for Themes. That is, Kratzer pursues the same logic as Schein did for severing Agents: She tries to come up with examples that show that thematic separation for Themes is crucially required. Her main example is (28).

(28) Every copy editor caught 500 mistakes in the manuscript.

Kratzer claims that (28) does not have a cumulative reading saying that between them, the copy editors caught a total of 500 mistakes. Passivizing the example does not help either, as (29) shows.

(29) 500 mistakes in the manuscript were caught by every copy editor.

The nonexistent reading, i.e., the cumulative one, would have the logical form in (30).

(30) ∃e∃x[500 mistakes(x) & theme(x)(e) & ∀y [copy.editor(y) → ∃e'[e' < e & agent(y)(e') & catch(e')]]]

(30) says that 500 mistakes were the plural Theme of an event in which every copy editor was a catcher. Kratzer argues that the fact that (30) does not exist does not show that Theme arguments are not Neo-Davidsonian, but she also argues that there is no evidence that Theme arguments are Neo-Davidsonian. Her main point is that the kind of argument Schein gave for Agents does not extend to Themes.

Other work argues that Themes need to be severed. Williams (2005, 2008) presents a range of arguments for severing the Theme in Mandarin Chinese and Igbo, and Schein (2003) provides a different argument for severing the Theme.[10] I turn to that now.

Schein's discussion is based on examples like (31).

(31) The cockroaches suffocated each other.

The sentence in (31) could be true "even where only the entire group sits at the cusp of catastrophe" (Schein, 2003, p. 349). Put differently, had there been only one less cockroach, they would all have made it. Schein (2003, p. 350) observes that none of the following paraphrases are accurate to capture this reading.

(32) The cockroaches each suffocated the others.
(33) The cockroaches each suffocated some of the others.
(34) The cockroaches suffocated, each suffocating the others.
(35) The cockroaches suffocated, each suffocating some of the others.

The problem is that all the paraphrases assign *each* a scope that includes the verb. Schein gives the logical form in (36) which has the paraphrase in (37) (Schein, 2003, p. 350). The logical form itself is not that important since Schein has other fish to fry as well in this paper; the paraphrase should be the focus of attention.

(36) $\exists$e[the X: cockroaches[X]](Agent[e, X] & suffocate[e] & Theme[e, X] & [ιX: Agent[e, X]][Each x: Xx] [ιe': Overlaps[e', e] & Agent[e', x]] [$\exists e$": t(e") $\leq$ t(e')] [ιY: Others[x, Y] & Agent[e", Y]] Theme[e', Y])

(37) 'The cockroaches suffocate themselves,
(with) them each acting
against the others that acted.'

The main point here is that each cockroach is in a thematic relation to some event E that contributed to the mass suffocation. But E is not itself a suffocation of one cockroach by another. Schein concludes that the scope of *each* includes the thematic relation, but not the event predicate *suffocate*.

Some readers may object that there are many independent issues that need to be dealt with concerning reciprocity before the above argument can be accepted. Here I will not discuss reciprocity in detail, but I refer the reader to Dotlačil (2010) and LaTerza (2011) for further arguments that reciprocity requires full thematic separation.

[10] Schein (2011) provides a different argument. See also Williams (2009) for a general critique of Kratzer's reliance on cumulativity.

Based on the cases discussed here (and the references not discussed explicitly), it seems valid to conclude that full thematic separation is required for some cases, hence it is an option in Universal Grammar. In the following two sections, I will present further arguments in favor of full thematic separation involving focus and variable adicities.

2.3. Focus and Full Thematic Separation

Herburger (2000), developing ideas of Partee (1992, 1999) presents an argument in favor of full thematic separation which she claims is necessary in order to give an adequate account of focus (see also Kawamura, 2007). Her arguments presuppose that we want the semantics to be of a neo-Davidsonian character. That is, the argument below is not an argument that this is the only adequate analysis of focus.

Consider the focus-neutral sentence in (38) and its logical form in (39).

(38) Milan bought cider.
(39) ∃e[buying(e) & Agent(e, Milan) & Theme(e, cider)]

If we then put focus on *cider*, we get the following logical form, Herburger argues.[11]

(40) Milan bought CIDER.
(41) ∃e[buying(e) & Agent(e, Milan)] Theme(e, cider)

In (41), the nonfocused part is the restrictor of the existential quantifier, whereas the focus element falls within the scope of the quantificational structure. That is, the restrictor is what is presupposed and the scope is what is asserted. If we instead focus either *Milan* or *bought*, we get the logical forms in (43) and (45).

(42) MILAN bought cider.
(43) ∃e[buying(e) & Theme(e, cider)] Agent(e, Milan)
(44) Milan BOUGHT cider.
(45) ∃e[Agent(e, Milan) & Theme(e, cider)] buying(e)

These logical forms show that in order to give a neo-Davidsonian analysis of focus, full thematic separation is required. Note that the thematic relation itself has to be outside the presupposed part — it is not sufficient to just place the

[11] I have simplified the logical forms somewhat, since Herburger repeats material both in the restrictor and in the scope. An example is given in (ii) for (i), where C(e) is a context predicate whose value is fixed by the context of utterance.

(i) ROSALIA wrote a poem.
(ii) [∃e: C(e) & Write(e) & Past(e) & [a x: Poem(x)] Theme(e,x)] Agent(e, rosalia) & Write(e) & Past(e) & [a x: Poem(x)] Theme(e,x)

Here I set this complication aside for ease of exposition.

content of the focused element outside the presupposed part. That is, a logical form like (46) is not sufficient.

(46) $\exists e[\text{buying}(e) \ \& \ \text{Agent}(e, x)] \ x = \text{cider}$

Were (46) to suffice, a Davidsonian version should suffice as well:

(47) $\exists e[\text{buying}(e, \text{Milan } x)] \ x = \text{cider}$

However, since verbs can be focused as well, as shown in (45), we need the thematic arguments to be severed from the verb. Otherwise a more complicated story needs to be told for cases involving verb focus, and we do not get a symmetric account involving argument focus and verb focus.[12]

The next argument concerns the variable adicity that many verbs display.

2.4. Variable Verbal Adicities

There is a different argument in favor of full thematic separation that comes from Carlson (1984), Parsons (1990), Borer (2005a,b), and Pietroski (2007). But let us first start with a case from Clark and Clark (1979), which involves the verb *to siren*.

(48) The factory horns sirened throughout the raid.
(49) The factory horns sirened midday and everyone broke for lunch.
(50) The police car sirened the Porsche to a stop.
(51) The police car sirened up to the accident site.
(52) The police car sirened the daylight out of me.

Even if native speakers of English have never heard *siren* used as a verb, they can easily interpret these sentences. The examples show that the new verb can appear with several subcategorization frames where the core meaning seems to be maintained (to produce a siren sound), though the specific meanings are augmented according to the syntactic environment. This strongly suggests that the meaning of *siren* cannot just come from the verb itself, but it depends on the syntactic construction. Such a view fits nicely with a Neo-Davidsonian theory where the verb only has an event argument.

However, there are many other examples. Consider the following ones from Pietroski (2007).

(53) White sold the knife to Plum for ten dollars.
(54) Plum bought the knife from White for ten dollars.
(55) Plum bought the knife for ten dollars.
(56) Plum bought the knife.
(57) Plum bought the knife for Scarlet.
(58) Plum bought Scarlet the knife for ten dollars.

[12] Thanks to an anonymous reviewer for raising this issue.

(59) White sold Plum on the idea of buying a knife.
(60) Scarlet's broker recommended buying long and selling short.

These examples show that verbs like *buy* and *sell* can appear in different contexts and with varying adicities. This is not an idiosyncracy related to these verbs, as Pietroski shows. The verb *kick* seems paradigmatically transitive (61), but there are also examples that undermine that conclusion, as in (62)–(64).

(61) White kicked the knife.
(62) White kicked the knife to Plum.
(63) White kicked Plum the knife.
(64) The baby kicked (at nothing in particular).

Similarly, it is not common to think that *cook* and *sing* are ditransitive. However, Pietroski points to the examples in (65)–(67), which demonstrate that these verbs are not just ditransitive.

(65) Mrs. White cooked an egg, while Colonel Mustard sang.
(66) White cooked an egg for Mustard, while he sang a lullaby.
(67) White cooked Mustard an egg, while he sang the baby a lullaby.

It is of course a theoretical possibility that *sang*, *cook* and *kick* are ternary predicates and that there are covert arguments in cases like (61) and (65). In other cases, it is quite plausible to assume covert arguments, as in (68)–(69).

(68) John ate.
(69) Mary played.

Other verbs do not appear to allow direct objects, like *dine*. Still, Pietroski points to examples like (70)–(71) that suggest that the concepts EAT and DINE are equally relational.[13]

(70) Mustard dined on shrimp.
(71) Mustard ate shrimp in high style.

A further case of discrepancies between grammatical and conceptual adicities concerns the verb *jimmy*. This appears to be a transitive verb.

(72) Alexander jimmied the lock with a screwdriver.
(73) Alexander jimmied the lock.

Here, the reference to an implement cannot appear as a third argument, it has to be in a modifying phrase. Still, the verb *jimmy* presumably indicates a triadic concept that in some way or other has a slot for an implement "with which the

[13]Here I am following the standard convention of letting small capitals denote concepts.

jimmier jimmies the thing jimmied" (Pietroski 2007, p. 358). As Pietroski puts it, apparent transitivity does not seem to tell us much about conceptual adicity.

A last example involves the concept of marriage. The following examples show that there is no fixed adicity for this lexical entry either.

(74) Scarlet married Plum, but their marriage was doomed.
(75) Scarlet got married to Plum, with the Reverend Green officiating.
(76) With reservations, Green married Plum and Scarlet.
(77) It was Scarlet's first marriage, though Plum married for the third time.

Common to this example and the others I have discussed is that on standard assumptions, one can accommodate such facts by stipulating a number of ambiguities in addition to covert arguments. But ambiguities do not explain anything, and is only something one should resort to if there are no other options.

Relevantly, these facts follow if arguments are not arguments of the verb. That is, full thematic separation means that verbs do not have adicities. Of course, as Pietroski points out, it may be that many verbs have "canonical" numbers of arguments, something that probably reflects the adicities of the given *concepts*. However, this is very different from saying that verbs take arguments. On this view, the idiosyncracies that we observe are due to complex interactions between grammatical principles and conceptual knowledge, in addition to language use; cf. Borer (2005a,b).

This is not to say that we do not want to account for cases like in (78)–(79), as Pietroski emphasizes.

(78) *Plum arrived Scarlet.
(79) *Plum sent.

We have seen a number of arguments that lexical items do not have fixed adicities, so if we are convinced by those arguments, we cannot say that these examples are out because these adicities are not fulfilled in the grammar (pace Ramchand, 2008, pp. 21–22). The examples also do not suggest that predicates can acquire adicities. As Pietroski (2007, p. 360) argues: "This borders on incoherence. One can posit covert arguments, or covert argument-taking elements that combine with lexical items. But I don't see how a lexical item can have its adicity contingently. A predicate with adicity one is, *ipso facto*, different from any predicate with adicity two (or zero)." The question is then how we analyze examples such as (78)–(79).

One way to deal with these examples is to follow Pietroski (2007) who argues that examples like (78)–(79) are bad for conceptual reasons.[14] That is, it is not

[14] Borer (2005a) seems to argue that there are not really any unacceptable examples of the sort in (78)–(79) because speakers can coerce plausible interpretations out of most structures. Still, she concedes that some examples are more acceptable than others. In the case of *Plum arrived Scarlet* there seems to be an interpretation where "Plum helped Scarlet arrive," but it's nevertheless the case that one cannot use (78) to utter that thought. So it seems we need to account for the perceived unacceptability of these data.

possible to combine the concepts PLUM, ARRIVED and SCARLET or PLUM and SENT. The reasons for this are not explicated in Borer (2005a, 2005b) or Pietroski (2007), presumably because they require a better understanding of concepts than we have at present. Borer and Pietroski are more concerned with arguing that these are not facts that the grammar should account for. Rather, they are facts about language use and about concepts that do not belong to the grammar proper. Unfortunately we do not know a whole lot about how concepts are structured and organized. They could be Fregean in nature, as Fodor (1975, 1987, 2008) argues is the case for the Language of Thought. It could also be that lexical conceptual structures in the sense of Levin and Rappaport Hovav (1995) are part of the Conceptual–Intentional interface. If that is the case, the accounts they offer of data such as (78)–(79) can be carried over in a framework where the status of examples like (78)–(79) are not taken to be grammatical facts.

I am not going to choose one particular way of doing it here, as it is not exactly clear to me what the relevant evidence would look like. Future research will hopefully tell us more about how exactly to analyze the facts on such a view.[15]

Another way to deal with the examples in (78)–(79) is to maintain that there is a grammatical reason why they are bad. Grammatical sources for the unacceptability of (78)–(79) are not limited to the verbs taking a limited number of arguments — which I claim not to be an issue here — and an alternative grammatical account is discussed below. This path might be better given data such as (80)–(85) (see, among many, Levin, 1993; Levin & Rappaport Hovav, 2005).

(80) I loaded the truck with hay.
(81) I loaded hay onto the truck.
(82) I loaded the truck.
(83) I loaded the hay.
(84) *I loaded with hay.
(85) *I loaded onto the truck.

[15]There might be some examples that do not fit the account I have just offered (thanks to Chris Barker (p.c.) for alerting me to this). Consider the following contrast.

(i) The doctor amputated John's leg.
(ii) *The doctor amputated the leg from John.

For (ii), it does not seem plausible to argue that this is bad because we cannot construe a relevant interpretation. The interpretation is readily accessible, and can be paraphrased as in (i). The sentence does also not seem to be bad for syntactic reasons since Romance inalienable constructions exhibit a syntax comparable to that of (ii). Vergnaud and Zubizarreta (1992) give an analysis of the differences between English and French inalienable constructions that could be implemented here, but since their story is fairly complex and rests on a number of theoretical assumptions within Government and Binding theory, I will not repeat their account here for reasons of space.

Verbs like *load* seem to have a requirement that there be a direct internal argument, i.e., a Theme. This does not follow from the structure of the real-world event that is being reported; arguably, then, there is a grammatical component to this fact. I am going to suggest that one plausible grammatical component is abstract Case. Following the by now standard assumption that functional heads assign Case (see, among others, Chomsky, 1991; Déprez, 1989; Johnson, 1991; Mahajan, 1989), one can argue that the absence or presence of the relevant Case feature on a functional head determines whether a sentence is licit or not. That is, for a structure like (78), the verb *arrive* does not occur together with the functional head that assigns accusative Case.[16] This means that when we have a structure like (78), the second argument (*Scarlet*) will not receive Case. Similarly, *load* needs to occur with a functional head that assigns accusative Case. For verbs that have variable adicities, this means that the verb can occur with different functional heads. Assuming that indirect objects are licensed by an Applicative head (Marantz, 1993; McGinnis, 2001; Pylkkänen, 2008), this head can optionally be present for verbs like *buy*. I am not going to give specific derivations here for reasons of space, but it seems like a Case-based story is a way to maintain that the data I have discussed here have a grammatical side even though verbs do not take thematic arguments. Lastly, as for (85) and (84), these require an independent explanation. There is a lot of work on the locative alternation in English; see Arad (2006) for a review. Borer's (2005a) story is compatible with the other assumptions I am making in this paper, so that story could be adopted here. For the sake of space, I am not going to outline her story here, but it crucially relies on syntax and functional heads.

One should ask the question whether concepts with variable adicities are any less prob lematic than linguistic predicates with variable adicities.[17] Arguably concepts are prior to linguistic predicates, since many animals seem to have concepts. So if we need concepts and linguistic predicates, concepts need to be acquired in some way or other (see Fodor 2008 for discussion of this, among others). It is not clear that we should expect concepts to be universal, and if they are not, then they have to be acquired by a child. A child will arguably acquire concepts that have various adicities, which is to say that the child has to be sensitive to what kind of adicities concepts have. And then linguists have to ask what the relationship between concepts and linguistic predicates are. They could be isomorphic, or, as the arguments I've reviewed so far indicate, they are not isomorphic and linguistic predicates have a different structure than concepts (see Marantz 1984; Pietroski 2008a; Zubizarreta, 1987, for some discussion). However, that does not mean that they do not have some grammatical structure. The Neo-Davidsonian view says that verbs do not have thematic arguments.

[16]An unanswered question on this story is how we ensure that the functional heads occur together with the relevant lexical items or roots. This is a general problem for the view that Case is assigned by functional heads, and I do not have anything new to say about this issue here.

[17]Thanks to an anonymous reviewer for pushing this question.

We need better tests to determine whether the facts above are of a grammatical or a conceptual nature. In order to show that cases like **John arrived Mary* are bad for grammatical reasons, we ought to show that their unacceptability correlate with other grammatical phenomena (say movement, extraction, binding, etc.). As far as I know, it is very hard to come up with such tests.

I have presented two views here as I think they represent the current state of the field when it comes to these issues. The field is in flux and some researchers think that the facts reviewed above suggest that we need to hold on to a view where the arguments of a verb are represented on the verb. Others push the Neo-Davidsonian approach and need to appeal to conceptual knowledge. I have mentioned that it is hard to come up with the relevant tests, but future work will hopefully help us make progress in this domain.

In the next section, I am going to look at some specific counterarguments against full thematic separation. I will mainly focus on the argument based on idiomatic interpretations.

3. IDIOMS AND THEMES

In the previous section, we saw arguments in favor of severing all arguments from the verb. One argument in favor of not severing the Theme has not been discussed so far, namely that of idioms. In this section, I discuss idioms and argue that they do not constitute a strong argument for not severing the Theme.[18]

Kratzer (1996) starts out by rephrasing the argument in Marantz (1984) which says that external arguments are not arguments of verbs. Marantz observes that there are many cases where the interpretation of the verb depends on the internal argument. Marantz (1984, p. 25) gives the following examples.

(86) a. throw a baseball
b. throw support behind a candidate
c. throw a boxing match (i.e., take a dive)
d. throw a fit

(87) a. take a book from the shelf
b. take a bus to New York
c. take a nap

[18]Another potential argument for not severing the Theme comes from Tenny's (1994) observation that only the Theme can be measured out, where "measuring out" entails that the direct argument plays a par ticular role in delimiting the event. However, as Borer (2005a) shows, Tenny's observation can be recast in syntactic terms by letting a particular syntactic position encode the property of measuring out. Therefore I do not see that Tenny's observation constitutes an argument for not severing the Theme. As Tenny also points out, there are constraints on all arguments: "Constraints on the aspectual properties associated with direct internal arguments, indirect internal arguments, and external arguments in syntactic structure constrains the kinds of event participants that can occupy these positions" (Tenny, 1994, p. 2).

d. take an aspirin for a cold
e. take a letter in shorthand

(88) a. kill a cockroach
b. kill a conversation
c. kill an evening watching T.V.
d. kill a bottle (i.e., empty it)
e. kill an audience (i.e., wow them)

One could of course argue that these verbs are homophonous, but that seems like a cop-out and it also seems to miss a generalization that one can make, namely that the verb and its internal argument together determine the relevant interpretation (cf. Marantz, 1984, p. 25). Furthermore, Marantz (1984, p. 26): notes that "... the choice of subject for the verbs does not determine the semantic role of their objects." This is supported by the data in (89)–(90).

(89) a. The policeman threw NP.
b. The boxer threw NP.
c. The social director threw NP.
d. Throw NP!

(90) a. Everyone is always killing NP.
b. The drunk refused to kill NP.
c. Silence can certainly kill NP.
d. Cars kill NP.

These facts would all follow if external arguments are not true arguments of their verbs, Marantz argues. Bresnan (1982) and Grimshaw (1990) take issue with this claim. Their counterarguments are given in (91) and (92).

(91) In short, one could capture the subject/nonsubject generalization without affecting the lexical representation of predicate argument structure, simply by giving the subject a distinguished role as final argument in the semantic composition of the sentence (Bresnan, 1982, p. 350).

(92) In any theta-marking calculation, the external argument is the last to enter in. Thus, in effect, calculations performed over the internal arguments are done without reference to the external arguments, but any a-structure calculation involving the external argument will of necessity involve the internal ones. The special properties of externals follow from their occupying the position of maximal prominence (Grimshaw, 1990, p. 35).

The problem with this reasoning is that it does not ensure that the external argument does not trigger a special interpretation of the verb. There is no technical obstacle to formulating such a rule, as Kratzer (1996, p. 115) notes. She gives the examples in (93) (Kratzer, 1996, p. 115), where the highest argument triggers a specific interpretation of the verb.

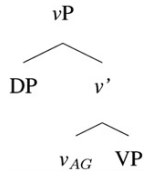
(93) a. If b is a time interval, then f(a)(b) = truth iff a exists during b.
b. If b is a place, then f(a)(b) = truth iff a is located at b.
c. If b is a person, then f(a)(b) = truth iff b is the legal owner of a.

Kratzer takes issue with the position stated by Bresnan and Grimshaw. Although Bresnan and Grimshaw are probably right that you do not need severed external arguments to get an asymmetry between external and internal arguments, Kratzer's point is that we get a better theory if we sever the subject. She uses the Marantz data to develop a specific syntactic and semantic theory where the Agent, but not the Theme, is severed from the verb.

Note, however, that Kratzer's argument only goes through if the specification of the verb's meaning only refers to the internal argument, and furthermore, if idiomatic dependencies like these can be captured by defining the meaning of the verb. Kratzer discusses the first premise but not the second. She seems to assume that idiomatic dependencies must be specified over objects in the lexicon, that is, over the verb and its Theme. However, we will see below that Marantz (1997) has a different view (see also Harley, 2009), namely that idiomatic dependencies can be defined over outputs of syntax, in which case Kratzer's argument would not go through.

Recall that for Kratzer, idiomatic dependencies are stated over function-argument relations in a single lexical item, i.e., the verb. Marantz (1997, p. 208) has a very different view as he argues that "The syntactic head that projects agents defines a locality domain for special meanings. Nothing above [v_{AG}] can serve as the context for the special meaning of any root below this head, and vice versa."[19] The quote refers to the structure in (94).[20]

(94)



Marantz (1997, pp. 208–209) points out that this view makes three predictions, listed in (95)–(97).

(95) No idioms with fixed agents (root in agent position, context for special meaning within VP).
(96) No eventive-passive idioms, but possible noneventive stative idioms.

[19]See also Harley (2009) and Bowers (2010) for a somewhat similar view of idiomatic dependencies.

[20]There has recently been a lot of discussion on how to capture "special meanings" within Distributed Morphology. I will not review the debate here, but see Arad (2003), Marantz (2001), Harley (2009), Borer (2009), Embick (2010) for different perspectives.

(97) No idioms with causative morpheme and lower agentive verb, but possible idioms with causative and lower nonagentive verb.

The first prediction is a slightly more refined version of Marantz (1984), which I have discussed above. The prediction is borne out, Marantz argues, and points toward examples such as (98), where the idiom is nonagentive.[21]

(98) The shit hit the fan.

This is the only point where Kratzer and Marantz agree. The two other predictions are predictions that Kratzer cannot make in her system, so to the extent that these predictions are borne out, Kratzer cannot capture them.

The second prediction is borne out, which we can see by considering the differences between "adjectival (stative) passives" and "syntactic (eventive) passives." The former are created with a functional head merging below the *v* head that projects the agent, while the latter are formed with a functional head merging above or as the head that projects Agents. Marantz points toward data from French and Chichewa that show this. Here I will look at the Chichewa data, which Marantz (1997, p. 210) cites from Dubinsky and Simango (1996).

Note that this language has different suffixes for passives and statives.

(99) Chimanga chi-ku-gul-idwa ku-msika.
corn AGR-PROG-buy-PASS at-market
'Corn is being bought at the market.' [no idiomatic reading, and none possible with passives]

(100) Chimanga chi-ku-gul-ika ku-msika.
corn AGR-PROG-buy-STAT at-market
'Corn is cheap at the market.' [idiomatic reading of *buy* in the context of STAT]

(101) Chaka chatha chimanga chi-na-lim-idwa.
year last corn AGR-PROG-cultivate-PASS
'Last year corn was cultivated.'

(102) Chaka chatha chimanga chi-na-lim-ika.
year last corn AGR-PROG-cultivate-STAT
'Last year corn was beautiful.'

[21] Similar examples are provided by O'Grady (1998, p. 298) and Bruening (2010, p. 535), putting forward data such as *fortune smiled on X, the ceiling caved in on X, the bottom fell out on X, time's up for X*. As Bruening points out, some of these might be unaccusative, but *smile on* is probably not, he claims.

Only statives can have idioms; passives cannot. Kratzer's approach cannot capture this because on her approach it should not matter whether the arguments that verbs take are active or stative.

Let us now look at the last prediction, (97). Building on Ruwet (1991), Marantz notes that a causative construction in English may not be idiomatic unless the lower predicate is nonagentive. This is illustrated in (103)–(106).

(103) Make oneself scarce.
(104) Make X over.
(105) Make ends meet.
(106) *Make X swim/fly a kite.

The examples in (103)–(105) are all nonagentive, whereas the example in (106) is agentive and consequently does not have an idiomatic reading.[22]

Lastly, there are verbs that can take part in multiple idiom patterns. Bruening (2010, p. 536) gives the following examples for *give*.

(108) give X the creeps
(109) give rise to X

If the idiomatic interpretation is specified on verbs, two lexical specifications for *give* seem to be necessary; one for each idiom structure. If one is in for polysemy, that is a possible analysis, but as I have argued above, we should resist this (cf. Boeckx, 2010; Borer, 2005a, 2005b). Bruening also argues that we need a theory of idiom formation that explains the lack of logically possible idioms such as (110), where the asterisk means that an idiomatic interpretation is missing.

(110) *give the wolves X

I will not attempt to develop such a theory here; the goal is to show that Kratzer's theory is inadequate to account for the complexities of idiomatic dependencies. See Bruening (2010) for one attempt at developing a comprehensive theory of idioms.

[22]The system Marantz argues for makes a prediction. Alexander Williams (p.c.) observes that Marantz would allow anything within VP to trigger a special interpretation. If there are low adjuncts in VP, they could therefore do that. Here is a hypothetical example that Williams provides, assuming that the adjunct is VP-internal.

(107) **I polished my china** with Bill **in the toolshed.**
'I wasted time doing something in a counterproductive manner with Bill yesterday.'

This example illustrated a hypothetical case where the bolded part of the sentence is an idiom. Since such examples are not idiomatic, there is a potential problem for Marantz' theory. However, it is unclear what the status of adjuncts are and whether they are actually "low" enough for the prediction to go through. I will leave this matter unsettled for the purposes of this paper.

All these arguments suggest that Kratzer's argument from idioms does not carry much force. It should be clear that idioms are difficult and hard to interpret theoretically, but to the extent that they tell us something, they do not seem to provide an argument for not severing the Theme.

4. CHALLENGES FOR THE SYNTAX–SEMANTICS INTERFACE

In this paper I have presented several arguments in favor of abandoning the traditional assumption that verbs take arguments. I have addressed counter-arguments and tried to show that they are not very strong. The resulting picture is one in which verbs do not take thematic arguments and where LFs have a Neo-Davidsonian structure. If this view can be upheld, it raises a number of serious challenges for the syntax–semantics interface.[23] In what follows, I will outline a few of these. For reasons of space, the discussion will be rather limited, but I refer the interested reader to Lohndal (2012) for much more discussion.

Borer (2005a, 2005b) has argued extensively against polysemy through lexical specifications ("endoskeletal" approaches) and in favor of structural constraints on different meanings ("exoskeletal" approaches).[24] It is basically the issue of whether the verb really is a full sentence in disguise or not. Borer points out that there is a long tradition in the syntactic literature to assume that properties of lexical items can help account for syntactic restrictions, that is, that the verb is indeed a full sentence in disguise. Especially since Grimshaw (1979) and Pesetsky (1982), the importance of the lexicon has been highlight. This culminated in the Theta Criterion, which states that "[e]ach argument bears one and only one theta-role, and each theta-role is assigned to one and only one argument" (Chomsky, 1981, p. 36). Borer notes, though, that the importance of lexical information is not specific to Chomskyan generative grammar but to most generative approaches (Borer, 2005a, p. 4). However, as Borer argues extensively, it is redundant to encode lexical properties both in the syntax and on the lexical items themselves. Why should the syntax recode the lexical information? Ultimately this is a question of why we need syntax at all if all syntax does is recode lexical information.

Borer suggests that we dispense with the lexical information and that the syntactic structure is the sine qua non when it comes to interpretation. She proposes a fundamental dividing line between substantive and functional vocabulary.

[23]See Krifka (1992) for a preliminary attempt at providing a syntax–semantics mapping that relies on syntactic features to select the proper thematic roles. Bayer (1996) argues that Krifka's account is not adequate and provides a different account.

[24]See also Boeckx (2010) for a range of arguments in favor of defeating what he calls "lexicocentrism."

> I believe that the proposed dividing line is a real one, and that it distinguishes between what is grammatically real—structures and formal properties of functional items, and what may be very real, but not grammatically so—properties of substantive vocabulary. The latter, I propose, are creatures born of perception and conceptualization, representing an intricate web of layers upon layers of a complex perceptual structure and emerging world knowledge, concepts which come to represent it, the reflection upon these concepts, and so on. Their properties, however characterized, are thus fundamentally not grammatical. (Borer, 2005a, pp. 10–11)

This quote makes it clear that structural aspects are more important than lexical aspects of individual words (cf. Boeckx, 2010; Borer, 2005a, 2005b; Cuervo, 2010; Gomeshi & Massam, 1994; Harley, 1995; Kratzer, 1996; Marantz, 1997; Ritter & Rosen, 1996, 1998; Schein, 1993, 2003, 2011; Tenny, 1994; Travis, 2010; van Hout, 1992, 1996 for similar conclusions). What we want to know then is what kind of structural aspects are relevant.

As Borer (2005a, p. 22) points out, the close match between the structural positions of complement and specifiers and their interpretation gave rise to the research program that attempts to reduce syntactic complementation (C-selection) to semantic complementation (S-selection) (Grimshaw, 1979; Pesetsky, 1982). But this program becomes less straight forward to implement once the functional domain is considered. In this domain, there is no direct relation between specifiers and subjects on the one hand and complements and objects on the other hand. Just think of a nominative subject that is in the specifier of a special functional projection. As Borer argues, this specifier is clearly not the subject of that functional projection (Borer, 2005a, p. 22). So, "[n]otions such as head, specifier, and complement, developed in the context of lexical projection and argument structure, carry no intuitive force when transferred over to functional projections" (Borer 2005a, p. 24), a point that van Riemsdijk (1998) also makes in a different context.[25] In fact, as Borer (2005a, p. 27) points out, little goes wrong if there is no significant grammatical distinction between specifiers and complements.[26] If this is true, then this is important for how we think about the mapping from syntactic representations to logical forms.

Borer stresses the importance of functional structure for interpretation. Based on the arguments above, the natural conclusion to draw is that functional structure is important for how arguments are interpreted, since the verb itself does not impose grammatical restrictions. An example of this is the significant literature on the functional element that introduces Agents (cf. Alexiadou, Anagnostopoulou, & Schäfer, 2006; Chomsky, 1995; Folli & Harley, 2007; Harley, 1995; Kratzer, 1996; Pylkkänen 2008; Ramchand, 2008; Sailor & Ahn,

[25]In Mirror Theory, as in Brody (2000), notions like specifiers and complements are mostly important for linearization and word order and they do not play a special role for interpretation.

[26]This argument is pursued at great length in Lohndal (2012), where it is shown that there has never been much evidence for distinguishing specifiers from complements.

2010). However, if both the Agent *and* the Theme are severed, as on a full Neo-Davidsonian approach, we want to know what such a syntax looks like. Of course, Neo-Davidsonian logical forms that encompass full thematic separation imply a specific view on semantic composition, namely that logical forms basically consist of conjuncts. I will assume such a view for the purposes of this paper, following Schein (1993, in press) and Pietroski (2005, 2008b, 2011).

There is an outstanding question, though, namely what the nature of the syntactic representations are such that we can develop a mapping algorithm from those representations onto logical forms. Since the starting assumption is that these logical forms should consist of conjuncts, it seems plausible to look for a syntax and a mapping that together will yield such logical forms. Lohndal (2012) entertains the hypothesis that each application of Spell-Out corresponds to a conjunct at logical form. Put differently, at each point where a chunk of syntactic structure is transferred to the interfaces, that chunk constitutes a conjunct. That would yield a fairly transparent mapping from the syntactic representations to the logical forms. Of course, the question now is how to construe a syntax that achieves this.

I am not going to develop such a syntax in this paper. Lohndal (2012) gives a very specific implementation of how this can be done by elaborating the proposal I just mentioned. What I want to emphasize here are the consequences of the arguments we have considered above. If the arguments for full thematic separation and Neo-Davidsonian logical forms can be sustained, then that raises important challenges both when it comes to accounting for unacceptable examples and for the mapping from syntactic structures onto these logical forms.

5. CONCLUSION

The goal of this paper was to present a host of arguments against the widespread assumption that verbs take thematic arguments. The arguments have been drawn from facts about distributive readings, focus, and variable verbal adicity. A number of counterarguments have also been addressed and I have argued that these arguments do not undermine the case for severing thematic arguments from the verb. I have also discussed possible consequences of this view for the syntax–semantics interface and argued that the mapping should rely on the functional structure of the sentence.

The most important take-home message from the present paper is that there are several arguments against the widespread assumption that verbs have argument structure that is reflected in the grammar. If the arguments given in this paper are correct, then verbs might simply be monadic for the purposes of the grammar. This has a range of consequences that future work has to deal with, concerning the relationship between monadic predicates and their (possibly) polyadic concepts, the character of the syntax–semantics interface and the nature of semantic composition.

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8

A NOTE ON APPLICATIVES

Tatjana Marvin

ABSTRACT

This chapter presents an analysis of Slovenian ditransitive sentences with the goal of contributing new data to the applicative research as well as examining the potential of the syntax-driven approach to the matter. Slovenian ditransitive sentences can be ambiguous between the low and the high applicative readings with the respective structures as proposed in Pylkkänen (2002). Some verbs, however, exclude the high applicative reading and have the low applicative interpretation only. First, this paper spells out the structures of ditransitive sentences in Slovenian, showing that the two different groups of ditransitive verbs do not emerge as a consequence of verbs appearing in different syntactic configurations. Second, in exploring a semantic solution to the problem, Rappaport Hovav and Levin's (2008) division of verbs with respect to the root semantics is followed. Verbs incapable of appearing in the high applicative structure are identified as belonging to the *give*-type group, their incompatibility with the high applicative being ascribed to the high applicative head's selectional requirement banning *give*-type roots in the complement VP. The proposal raises the question as to how much

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argument related semantics can be incorporated into syntactic heads and still maintain the view that argument structure is essentially regulated by the syntactic component. This study of a yet unobserved restriction in Slovenian ditransitive sentences is partially extended to Serbo-Croatian, Macedonian, and Bulgarian, testing the limits of a syntax-driven approach to argument structure.

Keywords: Argument structure, high applicative, low applicative, ditransitive verb, Slovenian

1. INTRODUCTION

Noncore arguments such as the external and dative arguments have been argued to be licensed through syntactic heads and not as direct arguments of the verb since at least the early 1990s in research by, among others, Hale and Keyser (1993, 2002), Borer (1994), Harley (1995), Kratzer (1996), Marantz (1997), Travis (2000), and Cuervo (2003). In particular, the applied argument in ditransitive sentences is argued to be introduced by the so-called low and high applicative heads in the syntax rather than being licensed the verb in Pylkkänen (2000, 2002, 2008) and in subsequent work by (Cuervo, 2003; Diaconescu, 2004; Diaconescu & Rivero, 2007; McGinnis, 2001; Slavkov, 2008).[1] A legitimate question that arises is whether, in a syntax-driven view of argument structure, lexical entries perform any role at all with respect to introducing applied arguments. This paper, though itself adhering to a syntax-driven approach to argument structure, shows that they still do. The study of the applicative structures in Slovenian (and in other South Slavic languages) reveals that in these languages the availability of the low and high applicative readings in ditransitive sentences relates to the inherent semantic meaning of the ditransitive verb in a way that cannot be explained straightforwardly by the proposal in Pylkkänen (2002). In order to maintain a syntax-driven analysis, the inventory of applicative heads needs to be enriched with selection information in such a way that expresses the incompatibility of the high applicative head with a semantically related group of verbs, that is, the *give*-type verbs in Rappaport Hovav and Levin's (2008) classification. This solution still leaves open some questions as to the role of lexical entries. Beyond the discussion

[1]Pylkkänen (2008) is a monograph that agrees with Pylkkänen (2002) on all main points. Given that all related subsequent work by other authors is based on Pylkkänen (2002) I shall hereafter mostly refer to the latter when analyzing Slovenian data in terms of a Pylkkänen-like approach.

of the theoretical issues faced by syntax-driven approaches, the paper also adds to the applicative typology developed in Pylkkänen (2002) and in subsequent work.

The paper is organized as follows. Section 2 contains a general description of applicative constructions, with special emphasis on the approach found in Pylkkänen's and subsequent work. Sections 3 and 4 deal with the main characteristics of Slovenian applicative constructions and the implications they have for Pylkkänen's analysis. Slovenian data is then linked to the approach in Rappaport Hovav and Levin (2008) in Section 5. Finally, a brief selection of data from three other South Slavic languages is presented in Section 6. Conclusions are presented in Section 7.

2. HIGH AND LOW APPLICATIVES

In its narrow meaning, the term applicative is understood as a construction in which a verb bears a specific morpheme licensing an oblique (noncore) argument that appears in addition to those arguments inherently selected by the verb. Such arguments are typically assumed to be interpreted as benefactive or instrumental, though they can be associated with thematic roles such as malefactive, goal, locative, and source as well. Some important works focused on this type of applicative include Baker (1988), Bresnan and Moshi (1993), and Alsina and Mchombo (1993). In its broad meaning, the term applicative is also used for oblique (indirect) objects of the verb that appear together with the direct object in languages even without an overt applicative marker. For example, Marantz (1993) proposes that English double object constructions and constructions with dative/accusative affected arguments in a wide variety of languages are in fact applicative constructions, but do not show phonologically overt applicative morphology on the verb. In this paper, the term 'applicative construction' is used in this latter sense.

The most influential work on applied arguments, which triggered fresh research in the field of applicatives, is found in Pylkkänen (2002). Pylkkänen (2002) examines a variety of languages (English, Japanese, Korean, Luganda, Venda, Albanian, Chaga, Chichewa), observing that all of these languages have a double object construction with an applied argument, for example, (1), but only in some languages (Luganda, Venda, Albanian, and Chaga) can such a participant be added to an unergative verb, such as, for example, *run* in Albanian; compare (2) and (3).

(1) a. I baked a cake.
b. I baked John a cake.

(2) a. I ran.
b. *I ran him.

(3) a. I vrapova.
him.CL.DAT ran.1SG
'I ran for him.' Pylkkänen (2002), *Albanian*

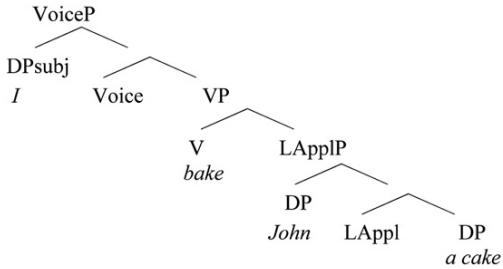
Also, in languages that allow applied arguments with unergative verbs (e.g., Albanian), it is possible to applicativize static verbs such as *hold*, (4), while in English-like languages such applicatives do not exist, (5).

(4) Agimi i mban Drites çanten time.
Agim.NOM CL.DAT holds Drita.DAT bag.ACC my
'Agim holds my bag for Drita.' Pylkkänen (2002), *Albanian*

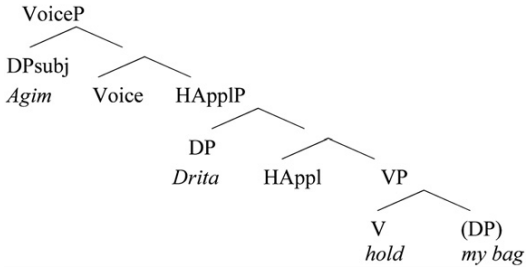
(5) *John held Mary the bag.

These observations lead Pylkkänen to propose that in English-like languages, the applicative argument is introduced by a *low* applicative head, which attaches below the verb phrase and semantically denotes a relation between two individuals; (6a) is the structure of (1b). In Albanian-like languages, the applicative argument is introduced by the a *high* applicative head, which denotes a relation between an event and an individual and is attached above the verb phrase; compare (6b), which is the structure of the sentence in (4).

(6) a. Low applicative (English, Korean, Japanese)



b. High applicative (Albanian, Chaga, Venda, Luganda)



The high applicative head is similar to the external argument introducing head *Voice* (Kratzer, 1996) in that it adds another participant to the event

described by the verb. Low applied arguments, on the other hand, bear no direct semantic relation to the verb, but rather bear a transfer of possession relation to the direct object. For example, the English sentence *John baked Mary a cake* can only mean that Mary comes into possession of the cake or is at least intended as its recipient, but it cannot mean that John did the baking for Mary so that Mary wouldn't have to (a high applicative meaning). Similarly, when dealing with static verbs such as *hold*, *x*'s holding a bag cannot involve a transfer of possession of the bag from *x* to the applied argument *y*, which results in the sentence in (5) being ungrammatical in English. In Albanian-like languages, such as in (4), on the other hand, the relationship established is a benefactive relationship between *y*, the applied argument, and the event of holding the bag; *y* is not required to come into possession of the bag as a result of *x* holding the bag.

2.1. Some Examples of Pylkkänen's (2002) Approach Applied Cross-Linguistically

The research on applicatives in Indo-European languages that follows Pylkkänen's (2002) proposal includes (among others) Cuervo (2003) for Spanish, Diaconescu (2004), Diaconescu and Rivero (2007) for Rumanian, and Slavkov (2008) for Bulgarian. It is argued that the double object construction, which in these languages appears with the doubled dative clitic, is a low applicative. The doubled clitic, as in (7), is the morphological spell-out of the low applicative head and the dative DP is inserted in its specifier position.[2]

(7) Pablo le cocinó una torta a Andreína.
Pablo CL.DAT baked a cake Andreína.DAT
'Pablo baked Andreína a cake.' Cuervo (2003)

3. APPLICATIVE CONSTRUCTIONS IN SLOVENIAN

3.1. Applicative Meanings and Structures of Ditransitive Sentences

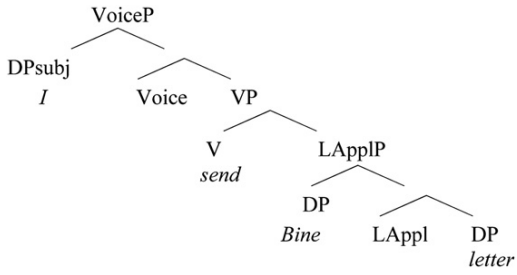
In Slovenian, ditransitive sentences with the dative and the accusative object, such as (8), have two possible interpretations. The reading represented by the structure in (8a) is the same as found in the English-like group of languages, where the applied argument *Binetu* 'Bine.DAT' is the (intended) recipient of the direct object *pismo* 'letter.ACC'; in Pylkkänen's terms, this is a low applicative. The reading represented by the structure in (8b) is the same as found in the

[2]In these languages, the ditransitive sentence without the doubled dative clitic is shown to be a prepositional dative construction on the basis of standard tests such as scope, binding of possessives, weak crossover, etc.

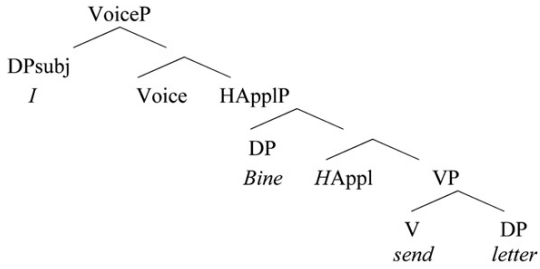
Albanian-like group of languages, where the applied argument is not a recipient of the direct object, but rather a beneficiary of the event of sending a letter — the sentence means that I sent a letter to somebody for Bine's benefit, probably because Bine for some reason couldn't do it. In Pylkkänen's terms, (8b) is a high applicative.[3]

(8) Binetu sem poslal pismo.
Bine.DAT AUX1SG sent.1SG.M letter.ACC

a. low applicative: *I sent Bine a letter.*



b. high applicative: *I sent a letter for Bine.*



The examples in (9) show that similar ambiguities are obtained with the verbs corresponding to *bake, throw, phone*, and *return*.

(9) a. Binetu sem spekel torto.
Bine.DAT AUX.1SG baked cake.ACC
'I baked Bine a cake.' or 'I baked a cake for Bine.'

b. Binetu sem vrgel žogo na streho.
Bine.DAT AUX.1SG thrown ball.ACC on roof

[3]Standard Slovenian does not have applicative structures with the doubled dative clitic as Bulgarian, Rumanian, and Spanish do (as in (7)), so no opposition between the low applicative/double object structure (the version with the doubled clitic) and the prepositional dative construction (the version without the doubled clitic) exists in the language. See Section 4 for a possible prepositional dative construction in Slovenian.

'I threw Bine (who was on the roof) the ball.' or
'I threw the ball onto the roof for Bine (who was not on the roof).'

c. Telefoniral sem mu na Japonsko.
phoned AUX.1SG CL.3SG.M.DAT to Japan.ACC
'I phoned him in Japan.' or 'I phoned someone in Japan for him.'

d. Vrnil mu bom knjigo.
returned CL.3SG.M.DAT AUX.FUT.1SG book.ACC
'I'll give him back his book.' or 'I'll return the book for him.'

The low applicative reading is usually the more prominent one in native speakers' judgments, though with the right context, the high applicative reading becomes easily accessible as well. Some native speakers also report that the high applicative reading becomes more readily available if the dative argument is a pronoun rather than a DP, as in (9c, d). Both high and low applied arguments can appear in one sentence, as can be seen in (10). It should be noted that such examples are more readily acceptable if the high applicative argument is a clitic; they are considered marked by some native speakers if the high applicative argument is a DP as in (11).

(10) a. Vrgla **ti** (high) bom **Zoji** (low) žogo.
thrown CL.2SG.DAT AUX.FUT.1SG Zoja.DAT ball.ACC
'I'll throw Zoja the ball for you.'

b. Poslal **ji** (high) bom **Petru** (low) pismo.
sent CL.3SG.F.DAT AUX.FUT.1SG Peter.DAT letter.ACC
'I'll send Peter the letter for her.'

(11) ?**Binetu** (high) bom vrgla **Zoji** (low) žogo.
Bine.DAT AUX.1SG.FUT throw Zoja.DAT ball.ACC
'I'll throw Zoja the ball for Bine.'

3.2. Possessor Dative Construction, Unergative Verbs, and Static Verbs

To complete the set of data on Slovenian, it should be noted that Slovenian possessor dative constructions show the same ambiguity between the high and low applicative readings as other ditransitive sentences, as seen in (12).

(12) Binetu sem ubil psa.
Bine.DAT AUX.1SG. killed dog.ACC
'I put down Bine's dog.' or 'I put down the dog for Bine.'

Unergative and static verbs also behave in an expected fashion — they are acceptable with the high applicative meaning, as can be seen for the unergative

spati 'sleep' and *teči* 'run' in (13a, 13b) and for the static verb *držati* 'hold' in (13c).[4]

(13) a. Dojenček ji spi celo noč.
baby.NOM CL.3SG.F.DAT sleeps all night
'The baby sleeps through the night on her.'

b. Zoja bo najprej tekla osebnemu, nato pa še državnemu trenerju.
Zoja.NOM AUX first run personal then also state coach.DAT
'Zoja will first run for her personal (coach) and then for the state coach.'

c. Bine je Zoji držal vrečko.
Bine.NOM AUX Zoja.DAT held bag.ACC
'Bine held a bag for Zoja.'

3.3. Exceptions

As first pointed out in Marvin (2009), some Slovenian verbs that appear in ditransitive sentences allow only the low applicative reading. An extended list is provided in (14) with the verbs grouped according to their common root meaning.

(14) Verbs with the low applicative meaning only:

- *DATI* 'GIVE': *darovati* 'present', *dati* 'give', *dodati* 'add', *dosoditi* 'give (e.g. penalty)', *dotočiti* 'add liquid', *dovoliti* 'allow', *naliti* 'pour', *nakloniti* 'dedicate (e.g. time)', *nameniti* 'intend', *podariti* 'present', *podati* 'hand, pass', *pomoliti* 'hand', *ponuditi* 'offer', *posoditi* 'lend', *posvetiti* 'dedicate', *obljubiti* 'promise', *zapustiti* 'leave';
- *VZETI* 'TAKE AWAY, DISPOSSESS': *(od)vzeti* 'take away from', *zapleniti* 'confiscate';
- *POKAZATI* 'SHOW': *kazati* 'show', *pokazati* 'show', *prikazati* 'show', *razkazati* 'show around';
- *POVEDATI* 'TELL': *citirati* 'quote', *govoriti* 'tell', *obvestiti*, *sporočiti* 'notify', *ponoviti* 'repeat, re-tell', *povedati* 'tell', *praviti* 'tell, say', *reči* 'tell', *prepovedati* 'forbid', *pripovedovati* 'tell', *razložiti* 'explain', *zapovedati* 'order';
- other: *videti (nekomu popek)* 'see (lit. someone's bellybutton)', *zavidati (nekomu uspeh)* 'envy (someone's success)', *zameriti (nekomu obrekovanje)* 'bear (someone a grudge)', *verjeti (nekomu karkoli)* 'believe (someone anything)', *privoščiti (nekomu uspeh)* 'grant (someone success)', *dolgovati (nekomu denar)* 'owe (someone money)', *primerjati (nekaj nečemu)* 'compare (something to something)'.

[4]See Cuervo (2003) for Spanish high applicatives of the same kind.

The sentences in (15) can only have the meaning in which Bine is a recipient of either the juice (15a), the image of the room (15b), or the story (15c), and never the high applicative meaning, in which the juice is given, the room is shown, the story is told to someone for Bine. Sentence (15d) can only have the meaning in which Bine is the 'possessor' of the success, but never the meaning in which Bine is a beneficiary and someone's success is envied for Bine.[5]

(15) a. Binetu sem dala sok.
Bine.DAT AUX.1SG given juice.ACC
'I gave Bine some juice.', *'I gave some juice for Bine (so Bine wouldn't have to).'

b. Binetu sem pokazala sobo.
Bine.DAT AUX.1SG shown room.ACC
'I showed Bine the room.', *'I showed a room for Bine.'

c. Binetu sem povedal zgodbo.
Bine.DAT AUX.1SG told story.ACC
'I told Bine a story.', *'I told a story for Bine.'

d. Binetu sem zavidal uspeh.
Bine.DAT AUX.1SG envied success.ACC
'I envied Bine's success.', *'I envied (someone)'s success for Bine.'

At first sight, a vast majority of the verbs in (14) are traditionally three-place predicates, requiring the agent, the patient/theme, and the applied argument. In a non-syntax driven approach to argument structure, one could reasonably claim that the examples in (15) are ungrammatical in their high applicative reading simply because the verb itself requires a low applicative argument and therefore, if there is an applied argument in the sentence, it has to be interpreted as a low applicative at the outset. However, the examples in (16) show that such explanation is not satisfactory. Even if we make sure a suitable low applicative argument appears in a sentence with the verbs in (14), and a high applicative argument is added on top of it, which is in general a viable option (see (10)), the sentences are still ungrammatical, suggesting that the

[5]The verbs that appear under the label 'other' are inherently incapable of a high applicative meaning; the dative DP they take is a non-recipient possessor (similar to English verbs *cost*, *envy*, *forgive*). While it is possible to construct a context where you tell a story to someone or show the room to someone for the benefit of the individual expressed by the dative argument, it is not even conceivable that you would envy someone or believe someone for the benefit of another person. These verbs are mentioned in the list of verbs taking only the low applicative meaning, but they shall not be analyzed in detail in the rest of the paper.

unavailability of the high applicative reading in certain verbs is not a consequence of that verb's thematic structure requirements.[6, 7]

(16) a. *Dala sem ji denar beraču.
given AUX1SG CL.3SG.F.DAT money.ACC beggar.DAT
intended: 'I gave the beggar some money for her.'

b. *Ponudila sem mu sok vsem gostom.
offered AUX1SG CL.3SG.M.DAT juice.ACC all guests.DAT
intended: 'I offered all the guests some juice for him.'

c. *Pokazala sem mu sobo najemnikom.
showed AUX1SG CL.3SG.M.DAT room.ACC tenants.DAT
intended: 'I showed the tenants the room for him.'

d. *Povedala sem mu zgodbo vsem prisotnim.
told AUX1SG CL.3SG.M.DAT story.ACC everyone.DAT present.DAT
intended: 'I told the story to everyone present for him.'

e. *Zavidala sem mu uspeh sodelavcu.
envied AUX1SG CL.3SG.M.DAT success.ACC colleague.DAT
intended: 'I envied his colleague's success for him.'

Finally, it is interesting to note that when the verb forms an idiomatic combination with the direct object, only the low applicative reading is possible, as can be seen in (17). In (17a) the verb *vreči* 'throw' is found in a ditransitive sentence that is ambiguous between a low and a high applicative construction. In (17b), which involves the idiom *vreči rokavico* 'challenge to a duel', only the low applicative reading is allowed — I can only challenge Bine to a duel, that is, literally 'throw him a glove' and never challenge someone else to a duel for Bine.

(17) a. Binetu sem vrgel žogo.
Bine.DAT AUX1SG thrown ball.ACC
'I threw Bine a ball.' or 'I threw a ball for Bine.'

[6]The possibility that the sentences in (16) are ungrammatical due to the garden path phenomenon can be excluded, since the same could be said of the sentences with two applied arguments in (10), which are perfectly acceptable.

[7]It is interesting to compare the examples in (16) to an example containing an ethical dative instead of the high applicative, which is perfectly grammatical, as in (i). Example (i) suggests that the ethical dative pronoun is inserted in a position that is different from a high applicative.

(i) On pa ji je dal denar beraču!
CL.3SG.M.NOM *pa* CL.3SG.F.DAT AUX given money.ACC beggar.DAT
'And there he goes and gives the money to the beggar on her!'

b. Binetu sem vrgel rokavico.
Bine.DAT AUX1SG thrown glove.ACC
Lit. 'I threw Bine a glove.', 'I challenged Bine to a duel.'
*'I challenged someone to a duel for Bine.'

Why is Slovenian applicative data difficult to handle by the analysis in terms of Pylkkänen (2002)? First, Slovenian is a type of language that opens a new typological category in the applicative treatment of ditransitive sentences, that is, languages in which ditransitive sentences may be ambiguous between a high and a low applicative interpretation.[8] Second, Pylkkänen (2002) (and the mentioned subsequent research) argues that applied arguments are introduced by the applicative heads in the syntax component and not by the verb. Under such view, one should expect an individual verb to be acceptable with any kind of applicative head unless there is a semantic or a configurational clash. In English, for example, static and unergative verbs do not appear in an applicative structure because English lacks the structure in which these verbs would fit, that is, the high applicative structure. The low applicative structure, on the other hand, cannot accommodate these verbs semantically, cf. Section 2. The situation in Slovenian cannot be accounted for as easily. In principle, there is no clear semantic or structural reason why verbs such as *bake*, *send*, and *throw* should appear in a ditransitive sentence with both applicative readings and their corresponding structures, while verbs such as *give*, *tell*, and *show*, on the other hand, should display only the low applicative reading/structure and, what is more, why they should be incompatible with the high applicative reading/structure altogether, as in (16).

In the remainder of the paper, I shall try to address the issue in the following way. First, I will show that ditransitive sentences with the verbs in (14) are structurally of the same kind as those with other verbs and crucially not necessarily prepositional dative constructions (Section 4). Second, I will try to provide a solution to the problem by relating the data to the verb-sensitive approach in Rappaport Hovav and Levin (2008) (Section 5).

4. DESCRIBING THE EXCEPTIONS FROM THE SYNTAX SIDE

4.1. Prepositional Dative Construction in Slovenian

A way to dispense with the problem of Slovenian verbs in ditransitive sentences would be to show that the verbs with only the low applicative reading (in (14)) appear in a structure that is different from the construction(s) that other,

[8]In the recent literature on applicatives, Diaconescu (2004) notes that Rumanian, though it is argued to be a low applicative language, also has a high applicative structure with activity verbs (e.g., *sing*, *read*, *dance*, *draw*, *run*, *work*) and the stative verb *hold* in the double object construction, while some verbs such as *wash* can appear in a low (the dative argument is a possessor) or a high applicative structure (the dative argument is a beneficiary). The high applicative reading is discussed for some German verbs in McIntyre (2006) — the datives in such a reading are termed *event-related datives*.

potentially ambiguous verbs, appear in. A suitable candidate for this 'other' structure is the prepositional dative construction (PDC hereafter). In this part, I will show that Slovenian indeed has a (hidden) PDC, but that it is present with all verbs in question, not just the verbs in (14), and that rather than being related to the lexical verb, it depends on the word order of the dative and accusative object in a similar fashion as discussed for Croatian in Gračanin-Yuksek (2006).[9] The meaning of the PDC in question is indeed very close to the meaning of the low applicative structure (the dative DP is a recipient in both cases), but the two structures crucially differ in terms of the binding of possessives and scope tests.

On the surface, it appears as though Slovenian has a single ditransitive structure and that the contrast between what is usually termed as the double object construction (DOC hereafter) and the PDC as illustrated in (18a, b) does not exist in this language. The fact that the word order of the direct and indirect object in Slovenian ditransitive sentences is flexible, as seen in (18c, d), is usually believed to be a case of optional scrambling.

(18) a. Tom gave Zoe a book.
b. Tom gave a book to Zoe.

c.	Bine	je	dal	Zoji	knjigo.
	Bine.NOM	AUX	given	Zoja.DAT	book.ACC
d.	Bine	je	dal	knjigo	Zoji.
	Bine.NOM	AUX	given	book.ACC	Zoja.DAT

A closer inspection of the data, on the other hand, reveals that this is not the case — the standard tests such as the binding of possessives (Barss & Lasnik, 1986; Larson, 1988; Pesetsky, 1995) and frozen scope (Aoun & Li, 1989; Bruening, 2001) show that in Slovenian, the word order is the determining factor. If the word order is *Dative-Accusative*, the structure is ditransitive, while the word order *Accusative-Dative* displays the properties of a PDC, as shown in Stegovec (2011). In this paper I will distinguish between a ditransitive structure and a PDC rather than a DOC and a PDC. The reason is that ditransitive sentences with the *Dative-Accusative* word order do not display one single structure that could be termed a DOC, but can be ambiguous (with verbs such as *send* and *throw*) and in such cases have two different structures, the low and the high applicative structures as in (8a, b), with only the low applicative equaling the English DOC.

As to the binding of possessives, in the *Dative-Accusative* order a possessive goal is unacceptable (19), while the possessive can be embedded in the goal in the *Accusative-Dative* order (presumably a PDC), (20).[10]

[9]For a discussion on related issues in the study of Japanese ditransitive structures, the reader is referred to Miyagawa and Tsujioka (2004).

[10]Unlike in Croatian, where the *Verb-Dative-Accusative* word order is ambiguous between the PDC and the DOC (Gračanin-Yuksek, 2006), the position of the verb in Slovenian is not relevant for the result of the applied tests. The *Verb-Dative-Accusative* order gives the same result as the *Dative-Verb-Accusative* one (Stegovec (2011)).

(19) a. Učitelj je učenki$_i$ predstavil njene$_i$ sošolke. →Ditransitive
teacher AUX student.DAT introduced her.ACC classmates.ACC
'The teacher introduced the student her classmates.'

b. *Učitelj je njenim$_i$ sošolkam predstavil učenko$_i$.
teacher AUX her.DAT classmates.DAT introduced student.ACC
'The teacher introduced her classmates the student.'

(20) a. Učitelj je predstavil učenko$_i$ njenim$_i$ sošolkam. →PDC
teacher AUX introduced student.ACC her.DAT classmates.DAT
'The teacher introduced the student to her classmates'

b. *Učitelj je predstavil njene$_i$ sošolke učenki$_i$.
teacher AUX introduced her.ACC classmates.ACC student.DAT
'The teacher introduced her classmates to a student.'

Aoun and Li (1989), Bruening (2001) and others show that the quantifier scope between the goal and the theme in the DOC is frozen, while in a PDC it is free. In Slovenian, the scope is frozen in the word order *Dative-Accusative*, (21), while it is free in the *Accusative-Dative* combination, (22), suggesting that the former word order corresponds to the English DOC (here termed 'ditransitive') and the latter to the English PDC.[11]

(21) $\exists > \forall$, $^*\forall > \exists$

Učitelj	je	enemu	učencu	dal	vsako	nalogo.
teacher	AUX	a/one.DAT	student.DAT	given	each.ACC	task.ACC

'The teacher gave a student each task.'

(22) $\forall > \exists$, $\exists > \forall$

Učitelj	je	dal	eno	nalogo	vsakemu	učencu.
teacher	AUX	given	a/one.ACC	task.ACC	each.DAT	student.DAT

'The teacher gave a task to each student.'

Stegovec (2011)

4.2. Word Order and the High and Low Applicative Readings

We now try to connect the possible applicative readings of ditransitive sentences with the pertaining structures by also taking word order considerations into account. The sentence (23a) with the *Dative-Accusative* order is a sort of ditransitive construction; with this particular verb (*poslati* 'send') there is ambiguity between the low and the high applicative readings in the structures in (24). It is important to note that in the low applicative reading/structure of (23a), the recipient asymmetrically c-commands the theme DP; the dative

[11] Bruening (2001) proposes that both the goal and the theme can move for scope, but that quantifier raising obeys superiority in the sense that it cannot alter the relative hierarchical position that the theme and the goal have in some local domain.

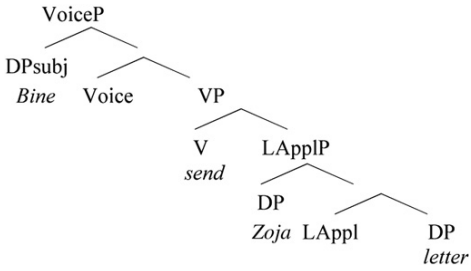
DP will thus always move first in scope-taking movement and it will be impossible for the accusative DP to cross over the dative, which is in line with the frozen scope in (21). The same is true of the high applicative reading/ structure of (23a), where scope freezing occurs as well.

(23) a. Bine je poslal Zoji pismo. Ditransitive/(low, high)
Bine.NOM AUX sent Zoji.DAT letter.ACC
'Bine sent Zoja the letter.' or 'Bine sent the letter for Zoja.'

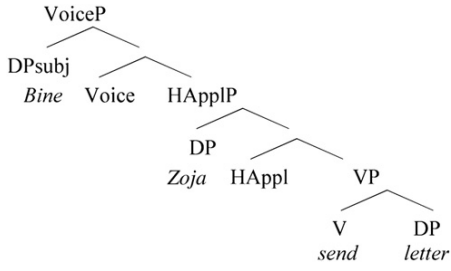
b. Bine je poslal pismo Zoji. PDC
Bine.NOM AUX sent letter.ACC Zoja.DAT
'Bine sent the letter to Zoja.'

(24) The structures for (23a), *Dative-Accusative*

a. low applicative reading

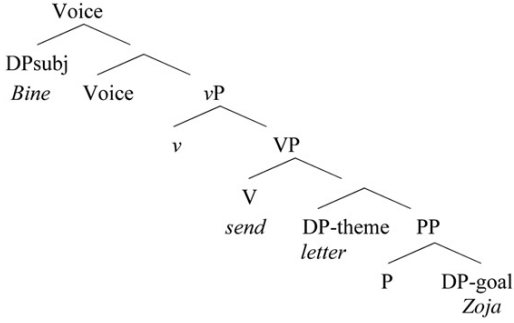


b. high applicative reading



The sentence with the *Accusative-Dative* order in (23b), on the other hand, has the structure of a PDC in (25) given the binding and scope tests from Section 4.1.

(25) The structure for (23b), *Accusative-Dative*



This structure is not to be equaled to the low applicative structure in (24a), despite the fact that the two are very similar in meaning (with Zoja.DAT as the intended recipient of the letter). The structure in (25) captures the fact that the theme DP and the directional PP behave as two constituents in a symmetric relation, which is consistent with the free scope in (22). The sentence with

the *Accusative-Dative* order does not have a possibility of a high applicative reading even with the verb *poslati* 'send', in which Zoja.DAT benefits from the sending of the letter.ACC by Bine.NOM, which strengthens the point that the word order of the two objects has syntactic as well as semantic consequences.[12,13]

If we take a verb from the list in (14), then the two possibilities of word order, exemplified for the verb *offer* in (26), yield two structures, the ditransitive and the PDC, according to the scope and binding of possessives tests. The ditransitive sentence in (26a) only has the low applicative reading and the pertaining structure. Again, the sentences in (26a) and (26b) are very close in terms of their meaning — Zoja.DAT being a recipient in both cases — but have a different structure (low applicative structure vs. PDC, respectively).

(26) a. Bine je ponudil Zoji torto. (Ditransitive/low)
Bine.NOM AUX offered Zoja.DAT cake.ACC
'Bine offered Zoja some cake.'

b. Bine je ponudil torto Zoji. (PDC)
Bine.NOM AUX offered cake.ACC Zoja.DAT
'Bine offered some cake to Zoja.'

[12]The high applicative reading is ruled out for semantic reasons; the goal DP is assigned the meaning of recipient, but not the meaning of beneficiary, by the prepositional head.

[13]Here, the structure used for a PDC is as in Cuervo (2003), which is largely consistent with the structure proposed in Bruening (2001). Gračanin-Yuksek (2006) uses the functional head H instead of the prepositional head P, where H is defined as a functional head needed to establish an *end-up-at* relationship between the theme and the goal. A more detailed analysis of this particular head and this structure would be desirable, especially since in Slovenian (and Croatian) the P/H head is null; however, this issue falls beyond the scope of the paper. At this point it suffices to show that the PDC structure is not the same as the low applicative structure given certain standard tests on scope and binding, while a more thorough investigation might reveal that what I (and Gračanin-Yuksek, 2006) call a PDC is not really an exact equivalent of a PDC found in English. For example, one of the standard tests to tell the English PDCs and DOCs apart is that the former are compatible with pure locatives, while the latter are not, (i).

(i) a. *I sent Toronto the letter. DOC
b. I sent the letter to Toronto. PDC

In Slovenian, this test does not work; both word orders are grammatically unacceptable with pure locatives, including the PDC one, (iia, b). Note, though, that Slovenian differs from English (or Spanish) in the fact that the locative in (iib) is expressed by a noun in the dative case and also that dative objects are generally animate, (iic). The explanation of these facts is left for future research.

(ii) a. *Poslal sem Torontu pismo. Ditransitive
intended: 'I sent Toronto the letter.'

b. *Poslal sem pismo Torontu. PDC
intended: 'I sent the letter to Toronto.'

c. Poslal sem pismo *pošti/poštarju. PDC
'I sent the letter to *the post office/the postman.'

TABLE 1: Combining word order and type of ditransitive verb.

WO: Dat . . . Acc (Ditransitive)		**WO: Acc . . . Dat (PDC)**	
Verbs in (14) e.g. *give*, *offer*	Other ditrans. verbs e.g. *send*, *throw*	Verbs in (14) e.g. *give*, *offer*	Other ditrans. verbs e.g. *send*, *throw*
low applicative	low applicative high applicative	PDC	PDC

The possible word orders, the types of ditransitive verbs and the corresponding structures are summarized in Table 1.

We see from Table 1 that the fact that verbs in (14) only show a low applicative reading cannot follow from their having a PDC structure, despite the fact that the meaning of the PDC and the low applicative structure is very similar (the noun in the dative case is in both cases a recipient). It is true that the sentences with these verbs do have a PDC structure with the *Accusative-Dative* word order, but so do the sentences with verbs such as *send* and *throw* with the same word order. If the word order is *Dative-Accusative*, then ditransitive sentences do not have a PDC structure (see Section 4.1), but rather display a ditransitive type of structure: the low applicative structure with the verbs such as *give* and *offer,* and either the low or the high applicative structure with verbs such as *send* and *throw.*

5. DESCRIBING THE EXCEPTIONS FROM THE SEMANTIC SIDE

5.1. A Verb-Sensitive Approach to Dative Alternation

In Section 4 we ruled out one possible structural solution to the problem of the verbs in (14) by showing that there is no single structure such as the PDC linking them. The next possible step is to see whether the verbs in (14) are connected in some semantic sense. The main claim in this section is that Slovenian applicative data can be linked to the verb-sensitive approach in Rappaport Hovav and Levin (2008). The main observation is that the division into the group of verbs with both high and low applicative meanings and the group with only the low applicative meaning in Slovenian overlaps with Rappaport Hovav and Levin's (2008) groups of verbs that participate in the dative alternation. Furthermore, it will be established that in order to keep a Pylkkänen-type analysis for languages such as Slovenian, the incompatibility of the high applicative head and the group of verbs in (14) should be attributed to the semantic properties of the high applicative head.

In their *verb-sensitive* approach, Rappaport Hovav and Levin claim that a verb's own meaning plays a key role in determining its argument realization options. Verbs are divided into two groups: verbs denoting only caused

possession meaning (*give*-type verbs) and verbs denoting both caused motion and caused possession meaning (*throw*-type and *send*-type verbs among others). The behavior of specific verbs with respect to the dative alternation, as illustrated in (27), is argued to follow from the inherent meaning of these verbs. For example, verbs such as *give* cannot appear in locative *wh*-questions as in (28a), but verbs such as *throw* or *send* can. Also, verbs such as *give* allow the to-variant if the indirect object is a person but not a place, (28b), while verbs such as *send* or *throw* allow both options, as in (28c, d).

(27) a. John gave/threw a book to Mary.
b. John gave/threw Mary a book. Rappaport Hovav and Levin (2008)

(28) a. Where did you *give/throw/send the ball?
b. I gave the package to Maria/*London.
c. I sent the package to Maria/London.
d. I threw the ball to Maria/the other side of the field.
Rappaport Hovav and Levin (2008)

Major classes of dative verbs as proposed in Rappaport Hovav and Levin (2008) are as in (29):

(29) 1. *Dative verbs having only a caused possession meaning* (*give*-type verbs)
a. Verbs that inherently signify acts of giving: give, hand, lend, loan, pass, rent, sell ...
b. Verbs of future having: allocate, bequeath, grant, offer, owe, promise ...
c. Verbs of communication: tell, show, ask, teach, read, write, quote, cite ...

2. *Dative verbs having both caused motion and possession meaning*
d. Verbs of sending (*send*-type verbs): forward, mail, send, ship ...
e. Verbs of instantaneous causation of ballistic motion (*throw*-type verbs): fling, flip, kick, lob, slap, shoot, throw, toss ...
f. Verbs of causation of accompanied motion in a deictically specified direction: bring, take ...
g. Verbs of instrument of communication: e-mail, fax, radio, wire, telegraph, telephone ...

With respect to the applicative argument, we observe that in Slovenian, verbs having both caused motion and possession meanings (i.e., *throw*-type, *send*-type, and verbs in (29f, g)) show ambiguity with respect to the two applicative meanings, while verbs having only a caused possession meaning (i.e., *give*-type) can only carry the low applicative meaning — the list of the verbs in (14)

overlaps to a great extent with the list in (29a, b, c).[14] In other words, I propose that the verbs in (14) share the root semantics of 'only caused possession meaning' and that this property somehow bans them from appearing with the high applicative meaning.

The division into two groups of verbs according to root semantics in connection with the applicative readings is also supported by the fact that some Slovenian verbs, such as the verb *dati,* can actually belong either to the *give*-type group (meaning 'give') or the *send/throw*-type group (meaning 'place') and behave accordingly with respect to the applicative readings. In the first meaning of *dati* only the low reading is possible (30a), while in the second meaning the high reading is allowed as well (30b). This is hardly surprising since the verb *dati* 'place' does not contain only 'caused possession component', but also the 'caused motion component' as part of its meaning.[15]

(30) a. Binetu sem dala knjigo. *low appl. reading*
Bine.DAT AUX.1SG given book.ACC
'I gave Bine a/the book.'

b. Binetu sem dala knjigo na polico. *high appl. reading*
Bine.DAT AUX.1SG placed book.ACC on shelf
'I placed a/the book on the shelf for Bine.'

Rappaport Hovav and Levin's (2008) analysis is of course only helpful in identifying semantically the exceptional group of verbs (those in (14)). The high applicative meaning, on the other hand, appears with a wider range of verbs than just those containing the caused motion and possession component in their root meaning. An obvious example of a verb that has a high applicative meaning but no caused motion and possession meaning is the static verb *držati* 'hold', exemplified in (13c). Also, the list of verbs with a possible high

[14]There are some verbs that are listed as the *give*-type verbs in English, but, allowing the high reading, behave as *send/throw*-type verbs in Slovenian. These are *prodati* 'sell' and *napisati* 'write'. It might be the case that the two languages differ with respect to the classification of these verbs due to the semantic interaction of the prefix and the root in Slovenian, the two verbs being monomorphemic in English. Also, Slovenian verbs *vzeti* 'take away from' and *zapleniti* 'confiscate' (their English equivalents are not 'dative verbs' and are thus not included in (29)) can be classified as a subgroup of *give*-type verbs given that their meaning is a directional opposite of *give*-type verbs (roughly 'caused dispossession').

[15]The verb *dati* 'place' allows a locative wh-question as in (ia), while the verb *dati* 'give' does not, (ib).

(i) a. Kam si dal knjigo?
'Where did you put the book?'
b. *Kam si dal knjigo?
intended: 'Where did you give the book?'

applicative meaning in Slovenian includes verbs such as *speči* 'bake', which does not clearly have a caused motion and possession component in its root meaning.[16]

5.1.1. Some Further Implications

Rappaport Hovav and Levin (2008) also discuss the implications of their proposal cross-linguistically, showing that Russian *send*- and *throw*-type verbs found with dative NPs as their indirect objects also take the allative preposition *k*. *Give*-type verbs, associated only with caused possession, are not found in the prepositional variant. The same holds for Slovenian, which can be seen in (31); examples are parallel to those in Rappaport Hovav and Levin (2008) for Russian.

(31) a. Učitelj je poslal ravnatelju knjigo.
teacher.NOM AUX sent principal.DAT book.ACC
'The teacher sent the principal a book.'

b. Učitelj je poslal učence k ravnatelju.
teacher.NOM AUX sent students.ACC to principal.DAT
'The teacher sent the pupils to the principal.'

c. Učitelj je dal ravnatelju knjigo.
teacher.NOM AUX given principal.DAT book.ACC
'The teacher gave the principal a book.'

d. *Učitelj je dal knjigo k ravnatelju.
teacher.NOM AUX given book.ACC to principal.DAT
intended: 'The teacher gave a book to the principal.'

Rappaport Hovav and Levin's (2008) observation illustrated above can be linked also to Slovenian applicative data. The verbs in (14), claimed here to correspond to *give*-type verbs in (29), crucially do not take any prepositional phrases as their counterpart (neither a *to* nor a *for* phrase), which can be seen in (31) above and in (32). *Send*- and *throw*-type verbs, on the other hand, always allow prepositional phrases as their counterpart (either a *to* or a *for* phrase in the meaning that is close to the meaning of the low applicative and a *for* phrase in the meaning that is close to the meaning of the high applicative).

(32) a. Bine je Katji ponudil sok.
Bine.NOM AUX Katja.DAT offered juice.ACC
'Bine offered Katja some juice.'

[16] Rappaport Hovav and Levin (2008) omit this class of verbs from their list (the so-called verbs of creation, Pinker, 1989), because they are interested in verbs taking recipients rather than benefactives and thus verbs taking a *to*-phrase rather than a *for*-phrase.

b. *Bine je ponudil sok k Katji/za Katjo.[17]
Bine.NOM AUX offered juice.ACC to Katja.DAT/for Katja.ACC
intended: 'Bine offered some juice to Katja/for Katja.'

c. Bine je Katji pokazal sobo.
Bine.NOM AUX Katja.DAT showed room.ACC
'Bine showed Katja the room.'

d. *Bine je pokazal sobo k Katji/za Katjo.
Bine.NOM AUX showed room.ACC to Katja.DAT/for Katja.ACC
intended: 'Bine showed the room to Katja/for Katja.'

e. Bine je povedal Katji zgodbo.
Bine.NOM AUX told Katja.DAT story.ACC
'Bine told Katja a story.'

f. *Bine je povedal zgodbo k Katji/za Katjo.
Bine.NOM AUX told story.ACC to Katja.DAT/for Katja.ACC
intended: 'Bine told a story to Katja/for Katja.'

5.2. A Possible Solution

It appears that due to their root semantics (only caused possession meaning), *give*-type verbs are compatible with a low applied argument and incompatible with the high applicative argument. First, as already discussed, the sentences such as in (15) are never ambiguous between the high and the low applicative readings, only displaying the low applicative reading. Second, it is not the case that a *give*-type verb requires a low applicative argument and — if such a requirement is met — allows a high applicative as well. This can be tested in sentences with two applied arguments seen in (16), where the high applicative reading cannot be achieved even if a *give*-type verb appears with two datives simultaneously in a sentence. The high applicative head is thus sensitive to lexical class. A way of maintaining a Pylkkänen-type analysis for languages such as Slovenian is to attribute the inherent incompatibility of the high applicative head and the *give*-type meaning to the semantic properties of the high applicative head as a selectional requirement; specifically, a ban of verbs having only the caused possession meaning in the complement VP, informally stated as in (33).[18]

(33) Selectional relationship between *HAppl* and *V*:
HAppl bans *V* (only +*caused possession*)

[17]The *for*-phrase that is relevant here and ruled out is the one that introduces the benefactive argument and the high applicative reading. The nonargument reading in which the *for*-phrase modifies *sok* 'juice' is irrelevant for this discussion.

[18]This is, in a sense, only a 'working' solution. It is very likely that the ban on verbs with the exclusively caused possession meaning will be shown to follow from a more refined proposal on the exact semantic content of the high applicative head. I leave this to be worked out in future research.

The above sketched proposal raises the question as to how much argument-related semantics can be incorporated into the syntactic tree to still maintain the view that the argument structure is essentially regulated by the syntax component. In allowing the proposal along these lines to 'save' an otherwise appealing syntactic solution we import yet another lexical property of vocabulary items (e.g., on exclusively caused possession meaning of verb roots) into the syntactic structure to do the work that should (in a syntax-driven approach) ideally be done by the syntax component independently.

6. OTHER SOUTH SLAVIC LANGUAGES

In this section I briefly discuss applicative data from three other South Slavic languages — Macedonian, Serbo-Croatian, and Bulgarian. Though further research is called for in these languages, the preliminary findings are in line with the Slovenian data. Serbo-Croatian and Macedonian are most similar to Slovenian; they allow ambiguity with verbs such as *bake*, *throw*, or *send*, but only the low reading with *give* or *show*. Some examples from Macedonian are given in (34).

(34) a. Mu ispekov torta. *low & high*
CL.3SG.M.DAT baked cake.ACC
'I baked him a cake.' or 'I baked a cake for him.'

b. Mu ja frliv topkata. *low & high*
CL.3SG.M.DAT 3SG.F.ACC.CL threw ball-the.ACC
'I threw him the ball.' or 'I threw the ball for him.'

c. Mu dadov sok. *low*
CL.3SG.M.DAT gave juice.ACC
'I gave him juice.'

d. Mu ja pokažav sobata. *low*
CL.3SG.M.DAT 3SG.F.ACC.CL showed room-the.ACC
'I showed him the room.'

Unlike in Slovenian and Serbo-Croatian, definiteness seems to play a role in Macedonian; high applicative meanings are more readily obtained with definite direct objects (35).

(35) a. Mu **go** prativ na Jovan **pismoto**.
CL.3SG.M.DAT 3SG.N.ACC.CL sent to Jovan letter-the.ACC
'I sent Jovan the letter.' or 'I sent the letter for Jovan.' *low and high*

b. Mu prativ na Jovan **pismo**.
CL.3SG.M.DAT sent to Jovan letter.ACC
'I sent Jovan a letter.' or ?'I sent a letter for Jovan.' *low and ?high*

Bulgarian can display the ambiguity with verbs *send*, *throw* but only with definite direct objects, while, similarly to other South Slavic languages discussed, only the low reading is possible with verbs such as *give* and *show.*

7. CONCLUSION

This paper presents an examination of the applicative structures in Slovenian and a brief typological survey of three other South Slavic languages in that respect, with the goal of contributing new data to applicative research as well as examining the potential of the syntax-driven approach to the matter, as found in Pylkkänen (2002) and subsequent work. In Slovenian, the two applicative heads proposed by Pylkkänen, the low and the high applicatives, do not appear with just any verb. The availability of the high applicative meaning seems to depend on the inherent semantic meaning of the verb in the VP: one group of verbs (*give*-type verbs in Rappaport Hovav and Levin's (2008) classification) appears only with the low applicative reading. In order to keep a Pylkkänen-style analysis, in which the applied argument is an argument of the syntactic head that introduces it, the syntactic inventory of applicative heads needs to be enriched with the appropriate content to precisely predict when the high/low ambiguity will occur and when only the low reading will be possible (due to the incompatibility of the high applicative head). Two possible options are explored. First, it is shown that the two groups of ditransitive verbs that emerge with respect to applicative meanings cannot be distinguished in terms of their structural properties. Second, Rappaport Hovav and Levin's (2008) division of verbs with respect to their root semantics is followed in providing a possible semantic solution.[19] Verbs incapable of appearing in the high applicative structure are identified as belonging to the *give*-type group; their impossibility of appearing in the high applicative structure follows from the selectional requirements of the high applicative head.

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[19]A reviewer pointed out that the High Applicative head could in this sense be compared to the Voice head as they both display verb class related restrictions. For example, if the argument licensed by Voice is an Agent, the verb in the VP must be an activity verb and not, for example, an unaccusative or a stative verb. This (interesting) line of investigation goes beyond the scope of this paper and is left for future research. For a comparative study of the two functional heads the reader is referred to Kim (this volume, Chapter 6).

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9

THE MANNER/RESULT COMPLEMENTARITY REVISITED: A SYNTACTIC APPROACH

Jaume Mateu and Víctor Acedo-Matellán

ABSTRACT

This chapter argues that the manner/result complementarity (Rappaport Hovav & Levin, 2010), that is, the observation that a verb cannot simultaneously lexicalize manner and result, need not be stipulated, but is derivable from general principles of syntactic computation and properties of the syntax-morphophonology interface. In particular, the complementarity derives from the formal (i.e., non-semantic) fact that a single root cannot simultaneously undergo conflation and incorporation in the lexicalization of a verb (Haugen, 2009). A sharp distinction between syntactically non-transparent conceptual content and syntactically transparent semantic construal is assumed (Mateu, 2002; Ramchand, 2008, i.a.). The manner/result complementarity derives from general syntactic principles and need not and, hence, must not be stipulated as a constraint on the structuring of events. These general principles are also responsible for other complementarities found in the lexicalization of verbs. If our

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proposal is correct, one should not intend to explain the relevant constraint in event structure terms. The syntactic approach to argument structure assumed in this chapter sheds light on the recalcitrant cases involving manner/result complementarity.

Keywords: Conflation, incorporation, argument structure, manner/result complementarity, syntax

1. THE MANNER/RESULT COMPLEMENTARITY

Rappaport Hovav and Levin (2010) make the interesting claim that no verb encodes or *lexicalizes* both manner and result (see also Levin & Rappaport Hovav, 1991, 2008, 2011).[1] The result is unspecified for MANNER verbs, that is, those verbs that specify a manner of carrying out an action (see some examples in (1a)). Similarly, the manner in which something acquires a state is unspecified for RESULT verbs (see some examples in (1b)).

(1) a. MANNER verbs (i.e., verbs that specify a manner of carrying out an action): e.g., *wipe*, *scrub*, *walk*, *swim*, etc.

b. RESULT verbs (i.e., verbs that specify the result of an event): e.g., *fill*, *clean*, *arrive*, *come*, etc.

Rappaport Hovav and Levin claim that the origins of the so-called "manner/result complementarity" in (2) can be found in the lexicalization constraint in (3):

(2) *Manner/result complementarity*: Manner and result meaning components are in complementary distribution: a verb may lexicalize only ONE.
(Levin & Rappaport Hovav, 2008, p. 1, ex. (6))

(3) *The lexicalization constraint:* A root can only be associated with one primitive predicate in an event schema, as either an argument or a modifier.
(Rappaport Hovav & Levin, 2010, p. 25, ex. (12))

In their lexicalist model, these authors claim that the root can be associated as a modifier in the event structure pattern of manner verbs (see (4a)) or as an

[1]According to Levin and Rappaport Hovav (2008, p. 1), *lexicalized meaning* refers to "those meaning components ***entailed*** in all uses of a verb, regardless of context [...]. In the unmarked case what is lexicalized in a verb is kept constant in all uses" (Our emphasis: JM & VAM).

argument in the pattern of causative change-of-state predicates (see (4b)). Given the lexicalization constraint in (3), it is predicted that the root in a single verb cannot be associated with both modifier and argument positions (see (4c)):[2]

(4) a. [x ACT$_{<ROOT>}$]
b [x CAUSE [y BECOME <*ROOT*>]]
c. *[[x ACT$_{<ROOT>}$] CAUSE [y BECOME <*ROOT*>]] (* in a single verb)

Our present syntactic proposal is that the constraint in (3) and its associated descriptive claim in (2) follow from how primitive elements of argument structure are composed in the syntax (Hale & Keyser, 2002; Harley, 2005; Marantz, 1997, 2005; Mateu, 2002; i.a.). In particular, we show that the constraint in (3) can be derived from the very nature of conflation and incorporation processes (Haugen, 2009). If our proposal is correct, one should not intend to explain the relevant constraint in event structure terms (cf. (3)).

2. A SYNTACTIC APPROACH TO THE MANNER/RESULT COMPLEMENTARITY

To advance our main point, we will show how the descriptive observation in (2) can be accounted for in a syntactic model in which notions like Manner and Result become grammatically relevant since they can be claimed to be relationally encoded in the relevant syntactic argument structures. In particular, we claim that Manner can be read off the adjunction relation to *v* (cf. Den Dikken, 2010; Embick, 2004; Harley, 2005; Mateu, 2002f; McIntyre, 2004; Zubizarreta & Oh, 2007), whereas Result can be read off a SCR (*Small Clause Result*)-like predicate (cf. Hoekstra, 1988; Ramchand & Svenonius, 2002; i.a.). For example, the same root $\sqrt{BREAK}$ is structurally interpreted as Manner in (5a) and as Result in (5b):

(5) a. [$_{vP}$ [$_{v}$ $\sqrt{BREAK}$ v] [$_{SC}$ [$_{DP}$ he] [into the room]]] (*He broke into the room*)
b. [$_{vP}$ v [$_{SC}$ [$_{DP}$ the glass] [$\sqrt{BREAK}$]]] (*The glass broke*)

We want to emphasize that our approach sharply contrasts with Levin and Rappaport Hovav's in that Manner and Result are not meaning components of

[2]Cf. Rappaport Hovav and Levin (2010, p. 26):

> [...] assuming that manner roots modify the predicate ACT and result roots are arguments of BECOME, a root can modify ACT or be an argument of BECOME in a given event schema. A root cannot modify both these predicates at once without violating the lexicalization constraint.

the root, but interpretations derived from the position the root occupies in the structure. From now on, we use capital letters to refer to Manner and Result in this sense. It follows that, from this neo-constructionist perspective, expressions such as "Manner root" or "Result root" are oxymoronic; if any, we could refer to "Manner constructions" and "Result constructions," that is, constructions where the root is adjoined to *v* and constructions where the root occupies the SCR-predicate position, respectively. By contrast, we use "manner" and "result," in lowercase letters, to refer to the conceptual content of the root. In this sense, we stick to Grimshaw's (2005, p. 85) strong claim that there are no constraints on how complex the conceptual content of a root can be, unlike Rappaport Hovav and Levin (2010, p. 25), who claim that "[m]anner/result complementarity, however, involves the root." As we will see, a root may certainly involve *manner* and *result* simultaneously; crucially, however, it may not be interpreted as *Manner* and *Result* simultaneously.

In our present theory, the constraint in (3) boils down to the *syntactic* fact that a single root cannot act both as a SCR-like predicate and as a *v* modifier at the same time (we'll exemplify it in more detail with the case study of the verb *climb* in Section 3). Importantly, the particular constraint in (3) should not be regarded as an inescapable stipulation (as in Rappaport Hovav & Levin, 2010), but can be shown to be derived from the formal fact that a root cannot be *incorporated* and *conflated* at the same time (i.e., in a single verb). In particular, we follow Haugen's (2009) revisionist claim in (6):[3]

(6) *Incorporation* is conceived of as head-movement (as in Baker, 1988; Hale & Keyser, 1993), and is instantiated through the syntactic operation of Copy, whereas *Conflation* is instantiated directly through Merge (compounding).

(Haugen, 2009, p. 260)

According to Haugen (2009), there are two ways of forming denominal verbs: that is, via incorporation or via conflation. Basically, in incorporation cases, the denominal verb (e.g., see (7a)) is formed via copying the full matrix of the nominal complement into the null verb (see Hale & Keyser, 1993). In conflation cases, the denominal verb (e.g., see (8a)) is formed via compounding a root with the null verb.[4]

[3]For Hale and Keyser (2002) conflation is an operation concomitant to Merge and "consists in the process of copying the p-signature of the complement into the p-signature of the head, where the latter is 'defective'" (p. 63). In this work we stick to Haugen's (2009) use of these terms: incorporation involves copying by head movement, while conflation involves directly merging a root with a head. For yet a different use of conflation and incorporation, see Baker (2003, p. 86f).

[4]An anonymous reviewer asks why, for instance, the example in (7a) involves incorporation, and the example in (8a) involves conflation, and not the other way around. With respect to the former, we assume, with Hale and Keyser (1993), that unergative denominal verbs like *dance* in (7a) involve head movement of a nominal element into a null verb. Independent evidence for the incorporation

(7) a. The boy danced
b. [$_{vP}$ [$_{DP}$ The boy] [$_{v'}$ [$_{v}$ $\sqrt{DANCE}$] [~~$\sqrt{\sqrt{DANCE}}$~~]]]

(8) a. The factory horns sirened midday (ex. from Clark & Clark, 1979, *apud* Borer, 2005, p. 69)

b. [$_{vP}$ [$_{DP}$ The factory horns] [$_{v'}$ [$_{v}$ $\sqrt{SIREN}$ v] [$_{DP}$ midday]]]

The reason why a root cannot be incorporated and conflated at the same time is morphophonological: a single null head, in this case *v*, may be specified with only one phonological matrix. Since both incorporation and conflation are aimed at filling up this null head *v*, they cannot apply simultaneously.

It is important to emphasize the fact that a syntactic approach to the Manner/Result complementarity, like ours, is not equivalent to a purely semantic one. Thus, we disagree with Rappaport Hovav and Levin's (2010) claim in (9):

(9) For the purposes of investigating manner/result complementarity, the specific type of predicate decomposition representation does not matter. The representations could be recast along neo-Davidsonian lines [. . .] or as minimalist syntactic structures.
(Rappaport Hovav & Levin, 2010, p. 24, fn. 3)

Rappaport Hovav and Levin's (2010) contention in (9) cannot be correct, since the predictions of the semantic and syntactic approaches can be shown to be quite different in an important way. For example, a brief comparison of Koontz-Garboden and Beavers's (2010) semantic approach with our syntactic one will be illustrative. As pointed out by these two semanticists, the manner/result complementarity in (2) cannot be said to hold as such when framed in truly semantic terms, *contra* Rappaport Hovav and Levin (2010). For example, Koontz-Garboden & Beavers point out that, conceived truth-conditionally, the prediction is that there should be verbs encoding both manner and result, and manner-of-death verbs can be claimed to fill in this gap, since they appear to lexicalize both the manner in which an action is carried out (e.g., for *electrocute*, electrocution) and the resultant state of an entity (e.g., for *electrocute*, the state

analysis in (7b) is the fact that in languages like Basque these predicates are overtly structured as a light verb and a nominal complement, which does not incorporate: *dantza egin* (lit. "dance do"). As regards (8a), we claim that the conflation analysis in (8b) is the syntactic expression of what Levin and Rapoport (1988) call *lexical subordination*, as in *Sue smiled her thanks*, "Sue expressed her thanks with a smile" ([$_{vP}$ [$_{DP}$ Sue] [$_{v'}$ [$_{v}$ $\sqrt{SMILE}$ v] [$_{DP}$ her thanks]]]). To be sure, from our neo-constructionist perspective, (8a) could receive an incorporation analysis albeit with a pragmatically aberrant interpretation: for example, the locatum interpretation "provide midday with a siren" or the location interpretation "put midday into a siren"/"transform midday into a siren." Crucially, only the interpretations emerging from the incorporation analyses are possible for the Romance counterpart of (8a), since conflation is not available in Romance (see Section 3; see also McIntyre, 2004, pp. 553–554).

of being dead by electrocution), and neither meaning component can be dropped out. Thus, by using manner of death verbs like *electrocute*, *drown* or *guillotine*, Koontz-Garboden and Beavers (2010) claim that Rappaport Hovav and Levin's (2010) generalization with respect to the manner/result complementarity does not hold as such in semantic theory: the former point out that its scope is narrower than the latter assume. However, to our view, what Koontz-Garboden and Beavers (2010) show is not that the complementarity in (2) is too strong; if any, what they show is that (2) cannot be formulated as such in purely semantic terms (*contra* Rappaport Hovav & Levin, 2010). Thus, Koontz-Garboden and Beavers (2010) conclude in (10):

(10) We must admit the third and final logically possible class of eventive roots, namely manner+result roots, contra Rappaport Hovav and Levin's assumption that such roots should not exist.
Koontz-Garboden and Beavers (2010, p. 34)

We are happy with Koontz-Garboden & Beavers' conclusion in (10), since it is worded in terms of *roots*: as noted above, we have nothing to say with respect to how complex the conceptual semantics of a root element can be; in particular, a root can of course be claimed to encode "manner" and "result" simultaneously as part of its conceptual content, that is, as part of the conceptual scene it invokes.[5] Rather our proposal here is that when Manner and Result are understood in *syntactic* terms, there *is* a validity for the descriptive generalization in (2) and the constraint in (3). Consider, for example, the manner-of-death verb *guillotine* in (11a). Our claim is that the syntactic argument structure corresponding to its use as a causative predicate of change of state is the one depicted in (11b), where the root is *structurally* interpreted as Result. In (11b) the root is the complement of an abstract P element that expresses *Terminal Coincidence Relation* (in Hale & Keyser's (2002) sense: a TCR involves a coincidence between one edge or *terminus* of the theme's path and the place. (A *Central Coincidence Relation* (CCR), in contrast, involves a coincidence between the center of the theme and the center of the place). The phonological matrix of the root in (11b) is copied into the null P en route to the null verb via incorporation.

(11) a. They guillotined Mary.
b. $[_{vP}\ [_{DP}\ \text{They}][_{v'}\ \sqrt{\textit{GUILLOTINE}}\ [_{PP=SC}\ [_{DP}\ \text{Mary}]\ [_{P'}\ P_{TCR}\ \cancel{\sqrt{\textit{GUILLOTINE}}}]]]]$

[5]Cf. Grimshaw's (2005, p. 75f) important distinction between *semantic structure* and *semantic content*. Following Hale and Keyser (1993f), we assume that only the former can be syntactized and then constrained by well-known syntactic principles. In contrast, the complexity of conceptual content (i.e., Grimshaw's (2005) *semantic content*) is not constrained by syntax. See also Borer (2005) for extensive discussion on the need to sharply distinguish the meaning conveyed by grammatical structures from the grammatically inert, conceptual content encapsulated in roots (in her terms, *listemes*).

That the predicate in (11a) is a change-of-state predicate and that it thus must receive an analysis along the lines of that in (11b) is born evidence to by the fact that it admits depictive secondary predication, as shown in (12). Following Rapoport's (1993, p. 179) proposal that only change-of-state verbs can have object-host depictives, Mateu (2002, pp. 16–18) claims that those telic verbs that coappear with these depictive predicates contain a TCR in their argument structure. In contrast, those atelic transitive verbs that involve a CCR cannot have object-host depictives (e.g., cf. **John pushed the horse*$_i$ *tired*$_i$).[6]

(12) They guillotined the murderer$_i$ barefooted$_i$.

We claim that the fact that the conceptual content of the root *guillotine* encodes manner/instrument is *not* structurally represented in (11b), although this fact could be said to have a linguistic effect: for example, as is well-known (cf. Alexiadou, 2010; Levin & Rappaport Hovav, 1995, among many others), agentive change-of-state verbs do not enter into the causative alternation (see (13)). We claim that it is part of our world knowledge that one cannot become guillotined without the intervention of an agentive causer:

(13) #Mary guillotined. (# on the reading: "Mary became guillotined".)

Similarly, in our neo-constructionist framework (see also Borer, 2005), the computational system allows us to generate the syntactic argument structures in (14a) and (14b), where the root is now structurally interpreted as Manner/Means since it is adjoined to v. As noted above, in these cases the root is argued to be compounded with the null verb via conflation (see Haugen, 2009; Mateu, 2005, 2008; McIntyre, 2004). Concerning (14b), our claim is that it is not syntactically but pragmatically ill formed: its structural interpretation would be, roughly, "They created Mary guillotining/with a guillotine" (cf. example (8b) above and also (14c)):

(14) a. $[_{vP}\ [_{DP}$ The guy$][_{v'}\ [_{v}\ \sqrt{}$*GUILLOTINE* v$]\ [_{PP=SC}\ [_{DP}$ his way$]\ [_{P'}\ P_{TCR}$ the list . . . $]]]]$[7]

b. # $[_{vP}\ [_{DP}$ They$]\ [_{v'}\ [_{v}\ \sqrt{}$*GUILLOTINE* v$]\ [_{DP}$ Mary$]]]$
(# on the reading: "They created Mary guillotining/with a guillotine".)

c. $[_{vP}\ [_{DP}$ They$]\ [_{v'}\ [_{v}\ \sqrt{}$*SMILE* v$]\ [_{DP}$ their thanks$]]]$

The important point for us here is that manner-of-death verbs like the one exemplified in (11a) do obey the constraint in (3), since the root is only

[6]See Hale and Keyser (2002) and Mateu (2002) for the claim that verbs like *push* involve a CCR. Cf. $[_{vP}\ [_{DP}$ John$][_{v'}\ \sqrt{}$*PUSH* $[_{PP}\ [_{DP}$ the horse$]\ [_{P'}\ P_{CCR}\ \cancel{\sqrt{}}$*PUSH*$]]]]$ (cf. *John provided the horse* ***with*** *a push; John gave it a push*). But see Harley (2005) for a different analysis of *push*-verbs.

[7]"It's hard to believe that the same guy who drank, rocked, and *guillotined* his way onto the shit list of every right-thinking American parent 30 years ago [. . .]" (http://www.straight.com/article-162245/alice-cooper).

incorporated (see (11b)) but not conflated (see (14)). Notice then that the present theory predicts that a root cannot be interpreted as Manner and Result simultaneously, given that it cannot incorporate and conflate at the same time.[8]

A final caveat is in order with respect to the Manner/Result complementarity. It is important to point out that such a complementarity only emerges in cases where a *monomorphemic* verb is involved: for example, notice that (3) does not hold for resultative constructions like *John wiped the table clean*, where the verb only encodes Manner, the Result component being encoded by the adjective. Importantly, the word level is not relevant in establishing the complementarity (for a different view, see Rappaport Hovav & Levin, 2010, p. 26). For instance, in the *out-prefixation construction*, exemplified in (15), the prefix encodes Result and the verb expresses Manner (Talmy, 2000):[9]

(15) John outswam/outdanced/outworked Mary.

Another relevant case could be the one discussed by Marantz (2001, p. 21, 2005, p. 12). According to him, the verb *destroy* and related Latinate verbs (e.g., *construct*, *instruct*, *restructure*, etc.) involve the bimorphemic analysis in (16): "$\sqrt{}$STROY is a manner root that incorporates a particle, spelled out *de-*, that takes an 'inner subject' as the direct object of the syntactically derived verb *destroy*." According to Marantz, the presence of the root in (16) would account for the ill-formedness of the anticausative variant of these verbs: for example, #*The city destroyed* (see Alexiadou, 2010 for recent discussion):[10]

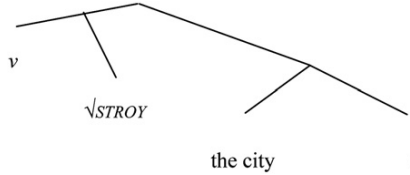
[8]In the same vein, we do not follow Harley and Haugen's (2007) analysis of instrumental verbs, which, according to them, involve conflation rather than incorporation (in Haugen's (2009) terms). Thus, Harley and Haugen (2007, p. 10) claim that "English instrumental denominal verbs always involve roots conflating directly with *v*, indicating *manner* [...]." Haugen (2009, p. 254) also claims, for the same verbs, that "the nominals are directly merged (or conflated) as adverbials directly into *v*." On the contrary, we think that the fact that the root $\sqrt{}$*HAMMER*, for instance, names an instrument prototypically used in the conceptual scenes evoked by the verb *hammer*, does not imply that this root needs to be merged, by conflation, as an adjunct to v. Similarly, as pointed out by Hale and Keyser (2002, pp. 43–44), impact verbs like *elbow* or *knee* (*Sue kneed him*) do not involve any adjunction of the nominal root to the verb, but rather merger of the nominal root in the complement position of P, as in locatum verbs like *saddle*.

[9]Marantz (2009) argues that *out*-predicates are resultative predicates in the sense that the internal argument is understood as being surpassed by the external argument along some dimension specified by the root of the verb. Thus, for instance, in *John outswam Mary* Mary is surpassed by John in swimming. The caused result state is, then, that of being surpassed.

[10]Cf. Marantz (2005, p. 14):

> The obligatoriness of an agent is associated with roots that name agentive manners, i.e., are event modifiers of the activity little v. The obligatoriness of an object results from a predicative piece <e.g., *de-*: JM & VAM> that takes an inner subject of the lower event. So, verbs that take obligatory agents and also obligatory objects must have an agentive manner piece and a predicative piece.

(16) John destroyed the city // *The city destroyed // *John destroyed.



(Ex. taken from Marantz, 2001, p. 21)

Here we will not review the advantages of Marantz's (2001, 2003, 2005) syntactic analysis in (16) (see his works for more discussion). Rather we limit ourselves to pointing out that verbs like *destroy* and other similar examples (e.g., *instruct*, *construct*, etc.) should not be taken as counterexamples to the syntactic Manner/Result complementarity as we understand it here since, as noted above, the relevant constraint we are interested in is the one that prevents encoding Manner and Result in a single, monomorphemic verbal element.

Note, finally, that Marantz's claim that $\sqrt{STROY}$ encodes Manner in (16) is a very good example of what we pointed out above: that is, "Manner," in syntactically oriented works, does not necessarily correlate or coincide with the "manner" component found in more intuitive semanticocentric approaches.

3. THE VERB *CLIMB* AND THE MANNER/RESULT COMPLEMENTARITY

In this section we use the verb *climb* (cf. Fillmore, 1982; Jackendoff, 1985; Koontz-Garboden & Beavers, 2009, 2010; Levin & Rappaport Hovav, 2008; Mateu, 2002) to exemplify and elaborate on our syntactic account of the Manner/Result Complementarity. The verb *climb* has been said to be interesting in that it shows two different uses, a manner use and a result/directionality one: compare (17a) and (17b), respectively.

(17) a. Joe climbed.
b. The prices climbed.

According to Levin and Rappaport Hovav (2008, 2011), when the basic manner meaning of *climb* is dropped out, this verb can be said to lexicalize a directional or result sense. However, unlike them, we do not think that the polysemy shown in (17a) and (17b) must lead us to categorize the root of *climb* as involving a manner of motion sense in (17a) and a result/path one in (17b). Rather, our claim is that the root $\sqrt{CLIMB}$ can occupy the complement position of an unergative structure in (18a), and be interpreted as *Incremental Theme*,[11]

[11]Following Harley (2005), we claim that this structural theta-role corresponds to the complement of v, be it a root or a DP. Accordingly, the nominal complement of Hale and Keyser's (1993f.) analysis of unergative verbs (as in (18a): [$_v$ DO $\sqrt{CLIMB}$]) is interpreted as an Incremental Theme. See Dowty (1991) for a different interpretation of this notion.

or can occupy the SC-like predicate position of an unaccusative structure in (18b), and be interpreted as Result.[12]

(18) a. Unergative structure: [$_{vP}$ Joe [$_{v'}$ v $\sqrt{CLIMB}$]], $\sqrt{CLIMB}$ as Incremental Theme

b. Unaccusative structure: [$_{vP}$ v [$_{SC}$ [the prices] $\sqrt{CLIMB}$]], $\sqrt{CLIMB}$ as Result

In addition, this root can appear as adjoined to *v*, as in the unaccusative structure in (19b).

(19) a. Joe climbed out of the tunnel.

b. [$_{vP}$ [$_{v}$ $\sqrt{CLIMB}$ v] [$_{SC}$ Joe out of the tunnel]], $\sqrt{CLIMB}$ as Manner

As emphasized above, it is the syntactic argument structure that tells us how the root is structurally interpreted: so, for example, we claim that the root $\sqrt{CLIMB}$ is interpreted as Incremental Theme in (18a), as Result in (18b), and as Manner in (19b). In our present syntactic approach, scrutinizing the grammatically relevant meaning of Manner of *climb* is not based on the conceptual presence of "clambering" in (17a) versus its absence in (17b) but rather it is based on purely syntactic factors: we provide a structural definition of Manner as modifier of *v* (see 19b).

Intuitively speaking (e.g., assuming Jackendoff's (1985) claim that "manner" is involved if and only if clambering is involved), one could say that both (17a) and (19a) involve a use of the root $\sqrt{CLIMB}$ as "manner." However, in our syntactic approach the qualification is to be made that Manner is only involved in (19a). In (17a) the root is rather structurally interpreted as Incremental Theme. A proof that (17a) and (19a) involve different structures and that the root $\sqrt{CLIMB}$ occupies different positions within them is auxiliary selection in languages like Dutch. In particular, while unergative predicates such as (17a) select the *HAVE* auxiliary (see (20)), unaccusative predicates like (19a) select the *BE* auxiliary (see (21), involving the presence of an argumental PP which codifies the Result):

(20) De avonturier heeft/*is geklommen (gedurende vele uren).
the adventurer has/is climbed during many hours

[12]Levin and Rappaport Hovav (2011, pp. 10–11, 17) classify examples like *The prices/cost climbed* as different from examples like *The elevator/smoke climbed*: the former are considered to involve a direction/result use of *climb*, whereas the latter are considered to involve a manner use. According to them, no manner component is possible in the former cases, since "these examples involve abstract themes" (p. 17). However, in our view the abstract vs. nonabstract status of the theme subject is irrelevant in determining the result vs. manner interpretation. Rather, grammatical tests should be used to find out the relevant structural interpretations; for example, the test of auxiliary selection in languages like Dutch, which we use later in this section. Finally, from a strictly semantic perspective, these authors make the correlation between *scalar* change and result, on the one hand, and *nonscalar* change and manner, on the other (p. 2). This implies that examples like *The elevator/smoke climbed*, classified by them as representing a manner use of *climb*, should involve a nonscalar change, which is, at least, counterintuitive to us.

(21) De avonturier is naar de top geklommen.
the adventurer is to the top climbed
Mateu (2002, p. 284)

Furthermore, we want to emphasize that the existence of cases like (22a), which do not involve the "manner" sense of clambering, does not question the existence of the *syntactic* process of so-called "Manner conflation": that is, as far as their syntax is concerned, examples like (22a) also involve this process, while examples like (22c) do not. Accordingly, we argue that both examples in (19a) and (22a), that is, the agentive and the non-agentive ones, involve the very same conflation process of the root with a null unaccusative light verb: see (19b) and (22b).[13]

(22) a. The train climbed out of the valley. (Ex. from Jackendoff (1985), ex. (14c))

b. $[_{vP}\ [_{v}\ \sqrt{CLIMB}\ v]\ [_{SC}$ the train out of the valley]], $\sqrt{CLIMB}$ as Manner

c. The train went out of the valley.

Additionally, we can put forward a typological argument in favor of the fact that Manner is only involved in (19a) and not in (17a). Indeed, according to Talmy (1991, 2000), a major typological divide in the expression of events of change (either change of location or of state) is that between the languages in which directionality is expressed by a nonverbal element and the verb expresses manner — *satellite-framed languages* — and those in which directionality is expressed by the verb and manner must be expressed as an adjunct — *verb-framed languages*. Mateu (2002) syntactically reformulates Talmy's typology by proposing that in verb-framed languages the abstract element expressing directionality is obligatorily incorporated into the verb, disallowing the

[13]Interestingly, Geuder and Weisgerber (2008) argue that the conceptual "manner" feature of *climb* cannot be simply described as "clambering." Instead they argue for a conceptual meaning of *climb* which involves "force exertion against gravity." This highly abstract definition of the conceptual content of $\sqrt{CLIMB}$ allows to explain why instances of *climb* can be found where both clambering and upward movement are absent:

(i) Afterwards the snake climbed down the crack [...].
Apud Geuder & Weisgerber (2008)

These cases are precisely the ones problematic for Jackendoff's (1985) account, based on a prototypicality hierarchy where only one meaning component (either clambering or upward movement) might drop out, but not both, as is the case in (i).

Importantly, we want to emphasize that Geuder & Weisgerber's (2008) description, which seems an accurate one, should be restricted to the conceptual content of the root $\sqrt{CLIMB}$. So we can agree that "force exertion against gravity" is probably what conceptually distinguishes (22a) from (22c), but we think that mixing the structural/syntactic meaning of Manner with (or reducing it to) this conceptual description is dangerous since this conceptual description (i.e., "force exertion against gravity") applies to both (17a) and (19a). So we stick to our syntactic/structural definition of Manner as "adjunct to v," which is involved in (19a) but not in (17a). As noted, in (18a) the root $\sqrt{CLIMB}$ is interpreted as Incremental Theme as a result of occupying the complement position of an unergative structure.

association of the verb with any other independent structure; in satellite-framed languages, in contrast, the element expressing directionality is typically not incorporated into the verb, which is therefore free to associate with a structure expressing manner. In the present terms, only satellite-framed languages allow a root to be conflated with the verb, thus expressing Manner. Therefore, taking into account that Romance languages are verb-framed, they are expected to have a direct counterpart for (19a) (see (23a)), but not for (19a), (see (23c), which is only acceptable on a locative, nondirectional interpretation). Manner conflation is then involved in (19a) but not in (17a).

(23) a. En Joe escalà. [Catalan]
det Joe climbed

b. En Joe sortí del túnel escalant.
det Joe exited of-the tunnel climbing

c. *En Joe escalà fora del túnel. [OK in the non-directional int.]
det Joe climbed out of-the tunnel

Finally, let us analyze the transitive use of the verb *climb* in (24a). Intuitively speaking, (24a) could be said to have the same meaning involved in (24b):

(24) a. Joe climbed the mountain.
b. Joe climbed to the top of the mountain.

Jackendoff (1990) makes one such proposal, claiming that the lexical entry of *climb* is the one in (25), by virtue of which *climb* is always characterized as involving a directional GO predicate. According to Jackendoff's notation in (25), the Path-constituent in (25) abbreviates the two possibilities in (26), as indicated by the curly brackets: (26a) accounts for (24a) and (24b), while (26b) accounts for examples like (19a), (22a), or (17a) — in this last case the Path is said to be unspecified. Those apparently problematic cases involving *climbing down* (e.g., *Joe climbed down the tree*) would also be accounted for by the possibility in (26b):

(25)
climb
V
_____ <XP$_j$>
[Event GO ([Thing]$_i$, [Path {TO ([Place TOP-OF ([Thing]$_j$)])}]$_{\{j\}}$)]

Jackendoff (1990, p. 76)

(26) a. [Path TO ([Place TOP-OF ([Thing]$_j$)])]
b. [Path]$_j$

Jackendoff (1990, p. 76)

Before refuting Jackendoff's claim that both (24a) and (24b) have the same structural meaning, we want to point out some other nontrivial problems for Jackendoff's Path analysis of *climb* in (25). For example, notice that Jackendoff's conceptual decomposition of the verb in (25) does not predict the important contrast between those resultative-like constructions with $\sqrt{CLIMB}$ shown in (27), which in our syntactic framework involve conflation of $\sqrt{CLIMB}$ with a causative light verb (e.g., [$_{vP}$ Joe [$_{v'}$ [$_{v}$ $\sqrt{CLIMB}$ *v*] [$_{SC}$ *the afternoon away*]]]), and those clearly ill-formed resultative constructions in (28), where the verb does encode a path:

(27) a. Joe climbed the afternoon away.
b. Joe climbed his way to the top.
c. Joe climbed his feet sore.

(28) a. *Joe {came/arrived} the afternoon away.
b. *Joe {came/arrived} his way to the top.
c. *Joe {came/arrived} his feet sore.

The relevant descriptive generalization seems to be that directional verbs do not enter into so-called "unselected object constructions" (Mateu, 2002),[14] so Jackendoff's lexical decomposition in (25) cannot be correct.[15]

Turning back to the pair (24a) and (24b), we claim, unlike Jackendoff, that the compositional semantics of the transitive (24a) and the unaccusative (24b) is not the same: they represent two very different syntactic construals, since (24b) is to be analyzed as involving an unaccusative construction like (19a) or (22a), while the transitive use in (24a) can be claimed to be provided with the same syntactic argument structure that can be posited for *route verbs* in examples like those ones in (29), adapted from Tenny (1994). These verbs involve conflation of the root with an agentive light verb (see the parallel structures in (30), both of which involve a syntactic Manner conflation process):

(29) "Route verbs" (Tenny, 1994, p. 17, 1995a, 1995b)
a. The adventurer swam the channel.
b. The adventurer surfed the wave.
c. The adventurer walked the trail.
d. The adventurer canoed the stream.

[14]See also Rappaport Hovav and Levin (1998, 2010) for the generalization that result verbs (including both directional and change-of-state verbs) cannot appear in unselected object constructions.

[15]See Mateu (2002) for some devastating consequences that follow from Jackendoff's (1990, 2002) compositional analysis of roots, a fatal choice which in part forces him to argue for a complex syntax-semantics interface.

(30) a. [$_{vP}$ Joe [$_{v'}$ [$_{v}$ $\sqrt{SWIM}$ v] the channel]] (cf. 29a)
b. [$_{vP}$ Joe [$_{v'}$ [$_{v}$ $\sqrt{CLIMB}$ v] the mountain]] (cf. 24a)

The parallelism between the transitive use of *climb* in (24a) and those route verbs in (29) is empirically motivated by examples like those in (31) and (32): these data show that route verbs cannot be regarded as involving change of state. That is, route verbs in (29) do not involve the SCResult-like structure that is often associated to change-of-state verbs like *break*, which do pass the test in (32):

(31) a. *What the adventurer did to the channel was swim it.
b. ??These deep channels swim easily.
c. *What the adventurer did to the wave was surf it.
d. ??These big waves surf easily.
e. *What the adventurer did to the trail was walk it.
f. ??These short trails walk easily.
g. *What the adventurer did to the stream was canoe it.
h. ??These deep streams canoe easily.

Mateu (2002, p. 298, ex. 39)

(32) a. *What he did to the mountain was climb it. [Cf. *What he did to the window was break it/open it/clear it.*]

b. ??These mountains climb easily [Cf. *These windows break/open/clear easily.*]

Mateu (2002, p. 296, ex. 35)

Given this, we concur with Levin and Rappaport Hovav's (2008) conclusion that Manner, but not Result/Path, is encoded by the verb *climb* in its transitive use in (24a) (*contra* Goldberg, 2010; Jackendoff, 1985, 1990; Koontz-Garboden & Beavers, 2009). However, for our present purposes, it is important to point out that we reach the same conclusion from different considerations: while Levin and Rappaport Hovav (2008) bring pragmatic arguments to their point, as shown in (33), we offer a purely syntactic argument: that is, Manner (and not Result) is involved in (24a) since the root $\sqrt{CLIMB}$ is adjoined to *v*.[16]

[16] Levin and Rappaport Hovav (2008, p. 13) offer an interesting example where a very similar verb (*scale*) shows a downward transitive use with cliff:

> A woman escaped with minor injuries after her car plunged over cliffs in East Sussex and landed on a ledge … The vehicle landed almost vertically on the ledge about 100 ft down from the top of the cliff with the woman inside. A coastguard team scaled the cliff to reach the woman who was then winched to safety and taken to hospital. (http://news.bbc.co.uk/1/hi/england/southerncounties/3691952.stm)

(33) The direction of motion in transitive uses <e.g., 24a> is determined contextually from the combination of the manner, the nature of the reference object, and the intention of the agent.
Levin and Rappaport Hovav (2008, p. 11)

As shown in (30b), no SC-like complement is involved in the syntactic argument structure of (24a): interestingly, the Romance counterparts of (29) in (34) express the same basic syntactic unergative structure [DO *x*] in a more transparent way:

(34) a. L'aventurer va fer el canal nedant. [Catalan]
the adventurer PAST do the channel swimming

b. L'aventurer va fer el recorregut caminant.
the adventurer PAST do the trail walking

c. ?L'aventurer va fer el riu amb canoa.
the adventurer PAST do the river with canoe

4. CONCLUSIONS

Following the Hale & Keyserian program, the so-called *Manner/Result Complementarity* in (35) and the lexicalization constraint in (36) can be claimed to follow from the way primitive elements of argument structure are composed in the syntax:

(35) *Manner/Result Complementarity*: Manner and result meaning components are in complementary distribution: a verb may lexicalize only ONE.
Levin and Rappaport Hovav (2008, p. 1, ex. (6))

(36) *The Lexicalization Constraint:* A root can only be associated with one primitive predicate in an event schema, as either an argument or a modifier.
Rappaport Hovav and Levin (2010, p. 25, ex. (12))

In our syntactic framework, the Manner/Result complementarity has to do with the fact that a single root cannot act both as a v modifier and as a SCR-like predicate at the same time. The constraint in (36) should not be regarded as an inescapable stipulation (as in Rappaport Hovav and Levin's (2010) lexical-*semantic* approach) but can be shown to be derived from the general *formal* fact that a root cannot be incorporated and conflated at the same time (in a single verb) — see Haugen (2009). Importantly, an approach such as ours predicts that we should find complementarities other than the Manner/Result one. A case in point seems to be what we could call the *Manner/Incremental*

Theme complementarity, already illustrated by the examples (17a) and (19a), repeated here as (37a) and (37b):

(37) a. Joe climbed. [$_{vP}$ Joe [$_{v'}$ v $\sqrt{CLIMB}$]], $\sqrt{CLIMB}$ as Incremental Theme
b. Joe climbed out of the tunnel. [$_{vP}$ [$_{v}$ $\sqrt{CLIMB}$ v] [$_{SC}$ Joe out of the tunnel]], $\sqrt{CLIMB}$ as Manner

Observe that while the verb encodes an Incremental Theme in the predicate of (37a), — as the result of the fact that the root $\sqrt{CLIMB}$ is merged as complement of *v* and *incorporated* into it — it encodes Manner in the unaccusative predicate of (37b), since its root is *conflated* with *v*; *climb* cannot express both meanings simultaneously.

As pointed out by Rappaport Hovav and Levin (2010, pp. 25–26), the constraint in (36) runs parallel to Kiparsky's (1997) lexicalization constraint of (38):

(38) *The lexicalization constraint*: A verb can inherently express at most one semantic role (theme, instrument, direction, manner, path).
(Kiparsky, 1997, p. 30)

In our Hale&Keyserian approach, no "lexicalization constraint" has to be established as such, since it follows from the interaction of general syntactic and morphophonological principles involved in conflation and incorporation processes.[17]

On the other hand, what on an intuitive level seems to be intrinsic conceptual properties of the root (e.g., cf. Geuder and Weisgerber's (2008) conceptual description of the "manner" component of *climb* as "force exertion against gravity") must be distinguished from those semantic features of the syntactic structure. We assume then Marantz's (2001) distinction in (39) between *semantic properties* and *semantic features*:

(39) Word (really, root) meanings don't decompose; the semantic <i.e., *conceptual*: JM & VAM> **properties** of words (= roots) are different from the compositional/decompositional semantic **features** expressed through syntactic combination.
Marantz (2001, p. 8)

[17] Kiparsky (1997, p. 490) states that the lexicalization constraint of (38) is derivable from a still deeper constraint, namely that of (i):

(i) Only the lowest (most deeply embedded) Th-role can be "incorporated", i.e. expressed by the noun of a denominal verb.
(Kiparsky, 1997, p. 484, ex. (15))

Apparently, (i) is closer than (38) to the syntactic approach advocated here — interestingly, Kiparsky claims, within the same passage, that (i) is "comparable to H&K's syntactic constraints on incorporation, or to Baker's ECP."

Given the crucial distinction between syntactically non-transparent conceptual content and syntactically transparent semantic construal (cf. Marantz, 2001; Mateu, 2002; Ramchand, 2008; i.a.), we claim that it is the syntactic argument structure that tells us how the root is structurally interpreted: so, for example, although the conceptual root $\sqrt{CLIMB}$ can be claimed to involve "force exertion against gravity" in all cases, we argue that the root $\sqrt{CLIMB}$ can be structurally interpreted in different ways depending on the syntactic position it occupies: for example, as Incremental Theme in (18a), as Result in (18b) or as Manner in (19b).

Finally, the relevance of the *conceptual* root ontologies at the lexicon-syntax interface is put into question: that is, the ontological status of the conceptual root is not what *pre*determines the linguistic derivation, as depicted in (40a) (e.g., cf. Rappaport Hovav and Levin's (1998, 2010) "canonical realization rules," which involve an ontological categorization of roots and their deterministic integration into non-syntactic event schemas). Rather, following Acedo-Matellán and Mateu (2010), we want to emphasize that it is the position the root occupies in the syntax that determines its *structural* interpretation (as Manner, Result, etc.). The picture we argue for is the one depicted in (40b) (cf. Borer, 2005).

(40) a. *Conceptual* interpretation of the root → Event/Argument structure → Syntax
b. Syntax → Event/Argument structure → *Structural* interpretation of the root

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10

SYNCRETISM AS PF-REPAIR: THE CASE OF *SE*-INSERTION IN SPANISH

Mercedes Pujalte and Andrés Saab

ABSTRACT

This chapter focuses on the mechanism that determines the distribution of clitic insertion (CL-*insertion*) in a set of well-known argument alternations in Spanish (reflexives, anticausatives, and passives/impersonals). We claim that a clitic is inserted post-syntactically when $v_{[\text{EXT ARG}]}$ is not merged with a DP in the syntax. The absence of a Spec, *v*P is due to the lack of ϕ-features on C or *v*. By adapting Müller's (2010) proposal that *Merge* is induced by subcategorization features, we argue that these features must be discharged at the morphological level for well-formedness conditions. If some of these features are not satisfied in the syntax, CL-*insertion* applies as a repair strategy to remove the surviving subcategorization feature. This is precisely the case in the empirical domain with which we are concerned: a $v_{[\text{EXT ARG}]}$ that is not merged with any DP in the syntax induces CL-*insertion* at PF as a last resort operation. Such an operation is subject to strict locality conditions that determine morphological visibility for cyclic computation (Embick, 2010; Marvin, 2002). We will show that a restrictive theory of CL-*insertion* not only derives the basic distribution of

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some argument alternations, but also accounts for why CL-*insertion* can rescue external arguments but not internal ones. If our approach is on the right track, it follows that the notion of *argument structure* should be considered as an epiphenomenon and not as primitive of grammatical theory.

Keywords: CL-*insertion*, argument alternation, subcategorization, feature inheritance, Distributed Morphology, Spanish

1. INTRODUCTION

In this chapter we propose a novel analysis for the problem of SE syncretism in Spanish. As is well known, the third person clitic pronoun SE (or the corresponding agreeing clitic *me*, *te*, *nos*, etc.) occurs in a number of contexts such as anticausative (1), passive (2), impersonal (3), and reflexive constructions (4), among others.

(1) Se hundió el barco con la tormenta.
SE sank.3sg the ship with the storm
'The ship sank with the storm.'

(2) Se cerraron las puertas para bloquear la salida.
SE closed.3pl the doors for to.block the exit
'The doors were closed in order to block the exit.'

(3) Nunca se castiga a los culpables.
never SE punishes to.acc the culprits
'No one ever punishes the culprits.'

(4) Juan se lava.
Juan SE washes
'Juan washes himself.'

We explore the hypothesis that the syncretism in (1)–(4) follows from the PF condition in (5):[1]

(5) At PF a clitic has to be inserted when $v_{[\text{EXT ARG}]}$ does not have a specifier.[2]

[1]As a PF condition, we expect to find variation across languages not only in the way in which (5) is satisfied but also in the way it is formulated. So it is a logical option that the reference to $v_{[\text{EXT ARG}]}$ is part of a parameter.

[2]It should be noted that this late insertion approach to SE constructions resembles the late insertion approach of expletives proposed by Vukić (2003) for languages like English. The reader is referred to this work and the references therein for more details.

Before illustrating the details of our proposal, let us clarify (5). First, v [EXT ARG] is shorthand for a little v that licenses external arguments (EA). Second, the claim that v [EXT ARG] does not have a specifier means that a transitive v is not syntactically merged with a thematic DP in the syntax, as has been proposed by Embick (2004) and several subsequent works (see especially Schäfer, 2008 for a detailed analysis). In this sense, *clitic insertion* (CL-*insertion*) is not a consequence of a valence-reduction operation like decausativization or reflexivization (*contra* Chierchia, 2004; Levin & Rappaport-Hovav, 1995; Reinhart, 2002; Reinhart & Siloni, 2005 for a mixed approach), but a rescue operation taking place in the PF branch. In this respect, our proposal is in consonance with other syntactic approaches to the problem of "valence reduction," as is formulated in Distributed Morphology (see Alexiadou & Anagnostopoulou, 2004; Alexiadou, Anagnostopoulou & Schäfer, 2006; Embick, 1997, 2004; Folli & Harley, 2005; Schäfer, 2008, among others). However, one of the novelties in (5) is the role that PF plays in deriving syncretism in these contexts. We argue that the clitic SE (or the relevant agreeing clitics) occurring in (1)–(4) is only inserted post-syntactically because of the need to satisfy some selectional property of v[EXT ARG].[3]

If (5) is on the right track, we have to answer at least the following questions:

(A) Under which particular syntactic scenario is the absence of an EA in the syntax allowed?
(B) How is CL-*insertion* implemented at PF?

As an answer to question (A), we propose that the inflectional system associated with the C-T and v-$\sqrt{}$ complexes (see Chomsky, 2007, 2008) plays a crucial role in deriving both the syntactic reduction effects and some of their thematic properties. According to this idea, what determines the argument reduction effects in (1)–(4) is the set of possible φ-feature combinations on C and v. Thus, we will show that the feature inheritance mechanism (Chomsky, 2007, 2008) and the possible φ-feature combinations on the core functional categories are closely linked to certain "argument structure" effects.

[3]An anonymous reviewer questions the PF character of categorial features and claims that they are syntactic diacritics for semantic relations. However, as the reviewer acknowledges, this semantic connection between selector and selectee is only one of the aspects of the syntax of categorial features. As is well known, the status of such features is indeed controversial at least since Grimshaw (1979) and Pesetsky (1982). The debate centers on whether or not c-selection could be eliminated in favor of s-selection. As far as we know, this reductionist move has presented more problems than solutions. Therefore, there is a purely formal residue of categorial features that affects the syntax-PF connection. This chapter, as much of current research in the minimalist framework, centers on this aspect of the problem. As far as the semantic import of categorial features is concerned, we do not have an explicit interpretative mechanism to offer. We only note below that the semantic consequence of a non-discharged categorial feature seems to be directly connected to some particular thematic interpretations of reflexives/reciprocals and to the semantics of arbitrary readings in general.

In our system, v might lack an EA if either the v-$\sqrt{}$ complex or the C-T complex is associated with no φ-features from the numeration.

The answer to question (B) is the heart of our proposal. We will suggest that there is an explicit mechanism for CL-*insertion* at PF, whose consequences go beyond the problem of SE syncretism in Spanish. In a nutshell, assuming that *Merge* is motivated by the need to satisfy categorial features (or structure-building features in Müller's, 2010 terms), the absence of a DP in the EA position of v causes a crash at PF, unless PF has some way to repair this subcategorization problem. We propose that CL-*insertion* is precisely a way to circumvent this failure. If this idea is on the right track, we must conclude that clitics have to be divided into at least two classes: (i) syntactic clitics (i.e., arguments introduced in the syntax) and (ii) morphological clitics. As we will see, morphological clitics have expletive-like properties, in the sense that they lack interpretable/valued φ-features, do not have a thematic role, and need an associate to value their features. At the same time, morphological clitics occupy specific positions in the clitic cluster: they always occur above syntactic clitics, at least in Spanish. In our system, this fact is accounted for under the following two hypotheses: (i) *Agree* is implemented in the morphology using the same Probe-Goal relation as in the syntax, with the difference that it applies only in the domain of heads (or complex heads) and (ii) morphological derivation is subject to phase conditions, as argued in Marvin (2002) and Embick (2010), among others. We show how the combination of hypotheses (i) and (ii) explains the mechanism of CL-*insertion*, and also why CL-*insertion*, as a repair strategy, is not attested in object position.

The chapter is organized as follows. In Section 2, we describe the basic distribution in the vP domain of the SE constructions given in (1)–(4). In Section 3, we present our basic assumptions about the nature of the inflectional and subcategorization features that trigger the syntactic operations of *Agree* and *Merge*. In Section 4, we propose an analysis of the syntax of SE constructions and show that they share the absence of a Spec,vP as their main property. In Section 5, we propose an explicit mechanism for CL-*insertion* at PF under the cyclic approach to morphology proposed by Marvin (2002) and Embick (2010). We observe that CL-*insertion* can apply to EA positions but not to internal ones: that is, there are no expletive-like elements in object position. Section 6 summarizes the main findings of the chapter.

2. THE DISTRIBUTION OF *SE* CONSTRUCTIONS IN SPANISH

In this section, we present our basic assumptions about the vP domain and describe the distribution of SE constructions in Spanish. The purpose of this

section is to show that the main property that all SE constructions share is the absence of an EA.

Following Folli and Harley (2005), we assume that little *v*s introducing EAs are associated with [DO] or [CAUSE] features, whereas pure unaccusative structures are associated with a [BECOME] feature. The [DO] and [CAUSE] features partially determine the thematic interpretation of EAs. Compare a pure unaccusative verb like (6) with transitive verbs that have agents (7) or causes (8) as their EAs:

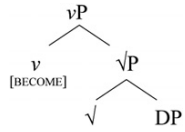
(6) Juan murió.
Juan died.3sg

(7) Juan asesinó a Pedro
Juan murdered.3sg to.acc Pedro

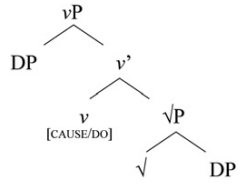
(8) El calor quemó el pasto.
the heat burned.3sg the grass

In (9) and (10) the simplified structures corresponding to the sentences in (6)–(8) are shown. On the one hand, (9) represents the *v*P structure of a pure unaccusative like *morir* "to die" (cf. (6) above). In this case, the feature associated with *v* is [BECOME], hence no EA is licensed and the internal argument (IA) of the Root becomes the syntactic subject. On the other hand, (10) represents the sentences in (7) and (8). Here, *v* licenses an EA that will be interpreted as an agent or as a cause, depending on the feature associated to *v*.

(9)



(10)



Let us assume that the intransitive version of (8) (e.g., *El pasto se quemó* Lit: "the grass SE burned.3sg") is not represented as in (9). Instead, this intransitive sentence has essentially the same underlying structure as its transitive counterpart (see Alexiadou & Anagnostopoulou, 2004; Alexiadou et al., 2006; Embick, 2004; Schäfer, 2008, among others). If this is the case, the sentence in (11), which might receive either a passive or an anticausative reading, follows from the selection of a $v_{[DO]}$ or a $v_{[CAUSE]}$. If $v_{[DO]}$ is selected, the passive reading is forced, but when $v_{[CAUSE]}$ is selected, the predicate receives the anticausative interpretation.

(11) Se hundieron los barcos.
SE sank.3pl the ships
Reading 1: The ships were sunk.
Reading 2: The ships sank.

There are several tests that distinguish the agentive and the causative readings. First, the anticausative interpretation is impossible with pure agentive verbs like *construir* "to build." Thus, in (12b) the only available reading is the passive one. Second, passive SE, but crucially not anticausative SE, allows agent-oriented modifiers (13). Third, cause-oriented modifiers are only possible with anticausatives, as illustrated in (14):

(12) a. Juan construyó la casa.
Juan built.3sg the house

b. La casa se construyó. (passive OK, *anticausative)
the house SE built.3sg
'The house was built.'

(13) El barco se hundió a propósito. (passive OK, *anticausative)
the ship SE sank.3sg to purpose
'The ship was sunk on purpose.'

(14) El barco se hundió con la tormenta. (*passive, anticausative OK)
the ship SE sank.3sg with the storm
'The ship sank with the storm.'

Another basic difference between anticausative and passive SE constructions is related to the inflectional properties of the subject. Passive SE is subject to a person restriction that prevents the occurrence of strong personal pronouns or proper nouns as subjects (see Burzio, 1986; Cinque, 1988; Di Tullio, 2005; D'Alessandro, 2007; López, 2007; Taraldsen, 1995; among many others):[4]

(15) a. Se encontraron cadáveres.
SE found.3pl bodies
'Bodies were found.'

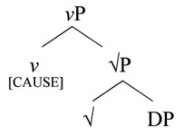
b. *Se encontró Juan/él.
SE found.3sg Juan/he

c. *Me encontré yo.
ME found.1sg I

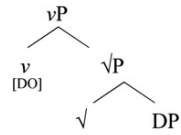
[4]This is the case in Spanish, but not in other Romance languages. In Italian, for example, proper names are allowed in passive SI constructions (Roberta D'Alessandro p.c.).

In cases such as (15b)–(15c), the only available interpretation is that of a reflexive. As is shown in Section 4, the difference between passive and reflexive SE depends on specific inflectional features: the inclusion of person features in the *v*P automatically yields the reflexive meaning. That is, passives and reflexives share the same type of *v*P with a $v_{[DO]}$, as illustrated in (17) (see Marantz, 1984 among many others for an unaccusative analysis of reflexives[5]). Anticausatives, in turn, have the same structure but with a $v_{[CAUSE]}$ (16).

(16) *Anticausative*



(17) *Passive SE/reflexives*



The crucial property that both (16) and (17) share is the lack of a specifier for the *v* node. We would like to argue that this property is also present in the impersonal SE: a construction that has resisted unification approaches in the Romance literature (see D'Alessandro, 2007 for references and thorough discussion):

(18) a. Se castiga a los culpables.
SE punishes to.acc the culprits
'One punishes the culprits.'

b. Se trabaja duro.
SE works hard
'One works hard.'

Impersonal SE has an arbitrary interpretation and, on a par with the passive, allows agent-oriented modifiers (19).

(19) Se persigue a los evasores para cobrar los impuestos.
SE chases to.acc the evaders for to.collect the taxes
'One chases the evaders to collect the taxes.'

One property that clearly distinguishes impersonal and passive SE is Case: the IA of passive SE values nominative, whereas the IA of impersonals

[5]Marantz's approach has been criticized in a number of different works, such as Reinhart and Siloni (2005) and Labelle (2008). Due to space limitations, we cannot address this criticism here, but we believe that the arguments presented in favor of or against the unaccusative analysis are quite controversial.

values accusative, as the pronominalization by accusative pronouns in (20) shows:[6]

(20) En este país se los castiga.
in this country SE Cl.acc.3pl punishes
'In this country, one punishes them.'

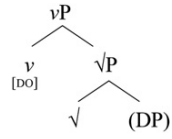
Finally, in impersonal SE contexts the verb occurs invariably in third singular person:

(21) a. Se castiga a los culpables.
SE punishes to.acc the culprits

b. *Se castigan a los culpables.
SE punish.3pl to.acc the culprits

We assume that the basic *v*P domain of impersonal SE is the same as that of reflexive/passive SE when it is transitive (see 18a). For cases like (18b), the underlying structure is the same as unergatives (parentheses in (22) only for convenience):

(22) *Impersonal*



The structure in (22) still does not account for some of the properties of impersonal SE mentioned so far (default agreement, for instance). Other characteristics of impersonal SE, such as its distribution in non-finite contexts (see Cinque, 1988 and Section 5), do not follow from (22), either. These problems will be discussed at length in the following sections.

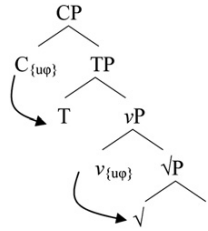
In summary, all the SE constructions introduced so far share the property of not having an EA merged in Spec,*v*P. In Section 4, we present an analysis of the syntax of SE constructions and, in Section 5, we propose an explicit morphological mechanism for CL-*insertion* at PF. However, before addressing these topics, we have to present our basic assumptions about inflectional and subcategorization features.

[6]It should be noted that pronominalization by an accusative pronoun is allowed in River Plate Spanish but not in other Spanish dialects, like Mexican Spanish, where a dative clitic is used even though this dialect is not *leísta* (e.g., *Se les castiga* Lit: "SE them.dat punishes"). Nevertheless, Ordóñez and Treviño (2007) have shown that this dative clitic behaves as a direct object in all the relevant respects.

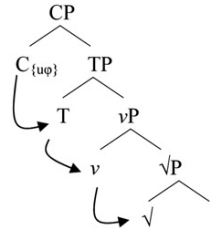
3. SOME ASSUMPTIONS: FEATURE INHERITANCE AND SUBCATEGORIZATION

We assume the *Agree* system (Chomsky, 2000, 2001) and a version of the feature inheritance mechanism recently suggested by Chomsky (2007, 2008). According to Chomsky, T has no φ-features; instead, T inherits them from C and, as a consequence, a C-T complex is formed. The same is postulated for the Root: The √P (or VP in Chomsky's system) does not have φ-features and must inherit them from *v*, forming a *v*-√ complex. In Chomsky's system, nothing prevents C or *v* from lacking φ-features. In a situation where *v* has no φ-features, *v* (and then the Root) inherits its φ-features from C, forming a new complex C-T-*v*-√. In this context, the IA values nominative case. The opposite situation is also possible: C lacks φ-features, but *v* is φ-complete. In this case, no inheritance is available under the assumption that inheritance cannot take place in a bottom-up fashion. In (23), these three possibilities are respectively illustrated:[7]

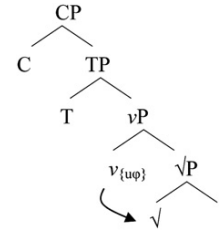
(23) a.



b.



c.



It is worth noting that there is a correlation between the feature composition of C/*v* and the number of potential DP arguments that can be merged in the derivation. Consider for instance the structure in (23b) where *v* lacks φ-features and a C-T-*v*-√ complex is formed. Here, the occurrence of two DPs with unvalued Case features should produce a crash, because at least one of the two DPs would not have valued its Case feature or, depending on some assumptions concerning morphological Case, two DPs would be valued with nominative Case, an illegitimate output at PF. In other words, inheritance from C-T to *v*-√ is restricted to the presence of one argument DP with structural Case. Furthermore, notice that if Probe-Goal dependencies can only be established within the complement domain of the Probe (Chomsky, 2000 and subsequent works), it follows that when C-T-*v*-√ is formed, the only available DP in the derivation should be merged as an IA. Therefore, the impossibility of inheritance from C-T to *v* whenever Spec,*v*P is filled with an EA follows

[7]Assuming that in a simple transitive sentence only C or *v* can be inherently specified for [*u*φ], the remaining option to explore is one where neither C nor *v* is specified with [*u*φ]. This could be the case with pure impersonal sentences or weather predicates (e.g., *llover*, "to rain"). We leave a careful discussion on this possibility as a matter of future research.

naturally:[8] an EA in Spec,*v*P is outside the search domain of *v* and cannot enter into an agreement relation with *v* (see Chomsky, 2007, p. 19 and Richards, 2007 for more discussion).[9]

Of course, other syntactic contexts should prevent inheritance from C-T to *v*-$\sqrt{}$. It seems, for instance, that inheritance stops whenever a potential locus of inheritance is already specified with (in)complete φ-features. Another situation that should be prevented is inheritance from C-T to *v*-$\sqrt{}$ in unergative structures, otherwise the EA in Spec,*v*P will remain outside the search space of *v*-$\sqrt{}$ for the reasons adduced by Chomsky (2007) (see above). One option is that unergatives are underlying transitives with an incorporated object (Hale & Keyser, 1993). We can assume then that object incorporation and φ-specification on *v* are in complementary distribution (maybe a controversial hypothesis, see Roberts, 2010). We leave a careful exploration of all these issues for future research.

With respect to the *Merge* operation, we assume with Müller (2010) that *Merge* is triggered by an ordered set of subcategorization or structure-building features associated to functional heads. According to Müller, this kind of feature must be discharged by *Merge* in order to remove the subcategorization features from the syntactic computation. This approach presupposes that the deletion of subcategorization features is entirely effected in the syntax by virtue of syntactic *Merge*. This means that if some subcategorization feature is not discharged in the syntactic component, the derivation is immediately aborted. However, we depart from Müller's proposal in this respect. Instead we suggest that the satisfaction of subcategorization properties is evaluated at PF. We formulate this idea in (24):

(24) At PF, every structure-building feature must be discharged.

[8]That is, unless this EA receives inherent Case or there is another functional head for valuing its Case feature. Quirky subject constructions in Icelandic and other languages could be an instance of this type.

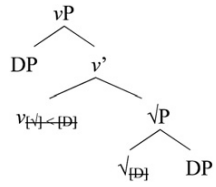
[9]Thanks to an anonymous reviewer for pointing out this issue. The reviewer also wonders whether inheritance from C-T to *v*-$\sqrt{}$ could be counter-cyclic, assuming category-defining *v* to be a phase head. There are several ways that can be pursued to deal with this potential problem. On the one hand, it could be the case that *Agree* is not constrained by phases. This is proposed in Bošković (2007), where several empirical arguments are presented (see also Chomsky, 2008, p. 143). On the other hand, one can take the opposite direction and claim that feature inheritance is indeed the mechanism that makes *Agree* a very local operation, that is, a phase-based operation (long distance agreement facts being an epiphenomenon). Assume with Chomsky (2007) that valuation and transfer happen together (see also Richards, 2007, 2011 for discussion and references). If this is correct, inheritance from C-T to *v*-$\sqrt{}$ is not a countercyclical operation, but is in consonance with a strict version of the Phase Impenetrability Condition. In a situation in which *v* has no inherent φ-features, transfer of its complement has to wait until inheritance from C-T to *v*-$\sqrt{}$ has applied (i.e., inheritance precedes *Agree* as suggested by Chomsky, 2007, p. 22). We will leave this issue for future research.

Let us illustrate the basic mechanics of our adaptation of Müller's system with a simple transitive sentence like (25). We focus only on the part of the derivation that corresponds to the *v*P domain.

(25) John read the book.

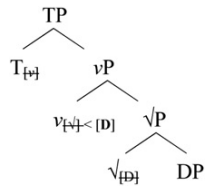
The two relevant heads are v and $\sqrt{}$ which have the following structure-building features associated to them: $\sqrt{}_{[D]}$ and $v_{[\sqrt{}]<[D]}$, where < indicates precedence in the order of *Merge*. Once $\sqrt{}_{[D]}$ enters the derivation, its D feature triggers *Merge* with a DP, forming $[_{\sqrt{P}}\ \sqrt{}_{[D]}\ DP]$. The feature D on $\sqrt{}$ is discharged by this instance of *Merge*. Then, $v_{[\sqrt{}]<[D]}$ is selected and its $\sqrt{}$ feature (the first in the list) is discharged by merging v with the $\sqrt{}$P that is present in the working space. Finally, the D feature on v activates another instance of *Merge* with a DP. As a result, all the subcategorization features on $\sqrt{}$ and v are correctly discharged and the derivation proceeds. In (26), we represent the *v*P with all the subcategorization features discharged.

(26)



In order to understand the difference between our assumptions and Müller's, consider a hypothetical situation where there is no DP discharging the D feature on v.[10] Under this circumstance, the derivation is aborted following Müller's approach, but not under our interface condition in (24). Assume now that in (26) T is introduced in the derivation with a v feature. As far as the syntactic derivation is concerned, T and *v*P can in principle be merged even if the head of the *v*P has its D feature not discharged:

(27)



Once this structure is sent to PF, there are two possibilities: (i) the non-discharged D feature on v produces a derivation crash or (ii) PF can provide some mechanism to rescue the derivation. The abstract situation sketched in (27) is precisely what we explore in the empirical domain of SE constructions.

[10]See Section 5 for a discussion on Roots in contexts where there is no DP for satisfying their subcategorization features.

In the next sections, we first show how our assumptions about feature inheritance derive the basic syntactic properties of SE constructions, and then provide a restrictive way to implement CL-*insertion* at PF.

4. THE SYNTAX OF *SE* CONSTRUCTIONS

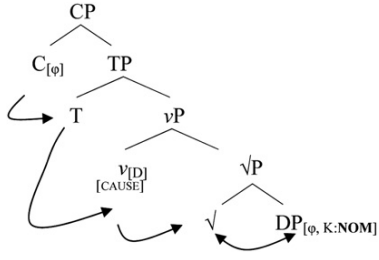
In this section, we present our analysis of the syntactic derivation involved in SE constructions. Our proposal is that anticausatives, passives, and reflexives have the structure in (23b), where *v* lacks φ-features and C has (complete or incomplete) φ-features; impersonals, in contrast, have the structure in (23c), where *v* is φ-complete and C is defective. Let us start with the anticausative alternation, illustrated again in (28):

(28) a. La tormenta hundió el barco.
the storm sank.3sg the ship
'The storm sank the ship.'

b. Se hundió el barco.
SE sank.3sg the ship
'The ship sank.'

The crucial property of (28b) is the absence of φ-features on *v*. In this scenario, there is feature inheritance from C to √, creating a C-T-*v*-√ complex. This chain agrees with the IA associated to the Root, valuing its φ-features, and assigning a nominative value to the unvalued Case feature of the IA. Crucially, the lack of φ-features on *v* is what blocks the introduction of an EA (see Section 3). In (29), we represent the relevant part of the derivation, where the bidirectional arrow expresses the *Agree* relation, and the unidirectional one, feature inheritance:

(29)



As for passive SE, we have argued that it essentially involves the same *v*P structure as that of anticausatives, but the feature encoded on *v* is not [CAUSE] but [DO] (see Section 2). This means that passive SE can only have an agentive interpretation. Like anticausatives, the IA in sentences like (30) agrees with T

and receives nominative case. However, passives have a person restriction, as we noted in Section 2. This is shown again in (31) (cf. (15) above):

(30) El barco se hundió (para evitar más catástrofes).
the ship SE sank.3sg (for to.prevent further disasters)
'The ship was sunk (in order to prevent further disasters).'

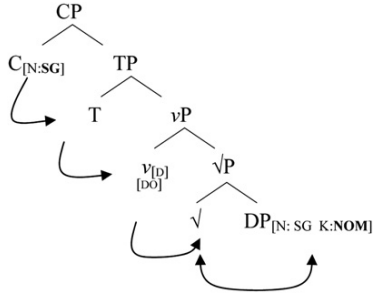
(31) a. *Se encontró María. (Ok as reflexive)
SE found.3sg María
Intended meaning: 'María was found.'

b. *Me encontré yo. (Ok as reflexive)
ME found.1sg I
Intended meaning: 'I was found.'

Crucially, the only available reading for the examples in (31) is the reflexive one. This leads us to the idea that the person constraint in SE constructions is linked to thematic interpretation at LF (see below). The only syntactic difference between passives and reflexives is that the former lack person features. That is, in both cases we have a C-T-*v*-$\sqrt{}$ complex, but in passives there are no person features on C.

Let us see concretely how the derivation proceeds for passive SE. In the first place, *v* is a fully defective head, which implies that a complex C-T-*v*-$\sqrt{}$ with unvalued number is formed. As a consequence, the DP agrees in number with T but not in person.

(32)

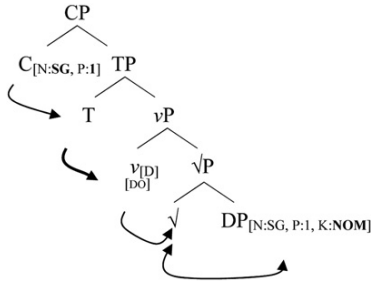


The person restriction follows straightforwardly from the derivation in (32), because a DP with person features cannot have its Case valued against defective probes. In this respect, we follow Rodríguez-Mondoñedo (2007) — with some adaptations — who proposes that the complement of existential constructions with *haber* "to have" in Spanish is subject to a person restriction due to the fact that *v* has no person features (in our terms, *v* is fully defective and inherits a number feature from C-T). He argues that the IA of these existential constructions must lack person features in order to have its Case feature valued. The assumption behind this analysis is that full DPs (but not proper nouns or strong pronouns) can optionally have a person feature as part of their inflectional specification.

As for reflexives, they syntactically encode person features. In (34), the derivation for reflexive SE is represented:

(33) Yo me lavo.
I ME wash.1sg
'I wash myself.'

(34)



The question is how the IA is also interpreted as the EA and why this is, indeed, the only available reading. We depart from Schäfer (2008) and much of the standard generative tradition in that we assume that no binding configuration is obtained in (34). Instead, we propose that the DP is just interpreted with two thematic roles. The theme/patient role is configurationally "assigned" and, to some extent, this is also the case for the external theta role. Let us assume then that thematic interpretation takes place in the domain of the *v*P, as is standard. In a configuration like (34), the IA receives its patient role in the complement position. With respect to the external thematic role, we have an agentive *v* without a DP in its specifier. We assume now that this thematic role can be "discharged" to the IA of an active sentence only if *v* lacks φ-features, which is the case with reflexives. Therefore, the IA of a reflexive configuration is accessible for further thematic interpretation. This gives us the following result:[11]

(35) In a *v*P domain with active-agentive *v*, the internal DP can be interpreted as the agent of the event only if:
(i) *v* has a non-discharged D feature,
(ii) *v*P is not inherently specified with φ-features.

It remains to be accounted for why in passive SE constructions the IA cannot be interpreted as the agent of the event. We think that the answer to this

[11]Jairo Nunes (p.c.) observes that (35) seems to be incompatible with the Movement Theory of Control (MTC, Hornstein, 1999 and much subsequent work). This is partially true. Indeed, if we are on the right track, movement of the IA to an EA position in the same *v*P domain should be prevented, otherwise this moved DP could discharge the [D] feature on *v* and SE should never occur. Nevertheless, movement to thematic positions in control structures is not ruled out by any evident property of our analysis. That is to say, our system is incompatible with a movement theory of reflexivization (see Boeckx, Hornstein & Nunes, 2008; Hornstein, 2001), but not with MTC.

problem has to be linked to the inflectional composition of DPs. Our claim is that to have person features is a necessary condition for being an agent. As we have seen, this is never the case with passive SE constructions. Hence, an arbitrary default interpretation is obtained for the EA at LF.

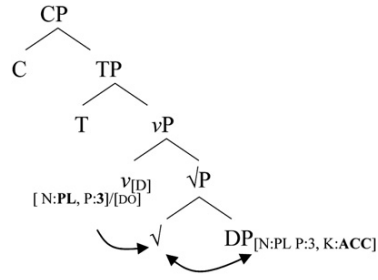
One of the main virtues of the system we are proposing is that it allows us to account for impersonal SE in Spanish with the same mechanism that underlies the other three cases. As mentioned in Section 2, impersonal SE has an agentive meaning and can occur with transitive and unergative verbs (although see Section 5.1 for other instances of impersonal SE):

(36) a. Se castigó a los culpables (para ganar las elecciones).
SE punished.3sg to.acc the culprits (for to.win the elections)
'One punished the culprits (in order to win the elections).'

b. Se trabaja bien en este lugar.
SE works well in this place
'One works well in this place.'

We propose that impersonal SE is a case where the C-T complex lacks φ-features, but *v* is φ-complete; hence, in (36a) the complex *v*-√ values its φ-features against the IA, which, in turn, receives accusative case. Furthermore, the system prevents feature inheritance from *v* to C (see Section 3). Thus, the complex C-T has no features and T gets default 3rd person singular at PF. In (37), we illustrate the syntactic output before Spell-Out.

(37)



Just like the other cases discussed in this section, (37) has a non-discharged D feature associated to *v*. Finally, with regard to the interpretation of impersonals, given that *v* is φ-complete, the IA receives its patient role and is inaccessible for further thematic interpretation in consonance with (35). As in this case *v* does not have a specifier, LF assigns an arbitrary and generic reading by default in the same way as in passive SE constructions.[12]

[12]The claim then is that in impersonal SE constructions there is no syntactic representation for the EA (against a long standing assumption; that is, there is no *pro* (Cinque, 1988 and much related work) nor PRO (Mendikoetxea, 2008). See Section 5.1 for more discussion.

5. A PHASE-BASED APPROACH TO CL-*INSERTION*

As we proposed above, the morphology of SE constructions is the overt reflex of the repair strategy that PF performs in order to cancel the D feature on *v*. In other words, a clitic is inserted post-syntactically whenever a sub-categorization feature survives the syntactic derivation. In this section, we propose an explicit mechanism for CL-*insertion* at PF that determines under which locality conditions this operation can take place.

We assume a restrictive theory of the syntax-morphology connection in consonance with DM and, especially, with the framework proposed by Marvin (2002) and Embick (2010), according to which morphological operations are sensitive to phases. This approach is directly linked to some recent lines of thinking in the generative enterprise at least since Chomsky (2000, 2001). The current debate focuses on what constitutes a syntactic cycle and how much syntactic information is accessible for further syntactic or morphological operations. According to Marantz (2007), category-defining heads like *n* or *v* are cyclic heads, an idea that Embick formulates in the following way:

(38) Category-defining heads *n*, *v*, *a*, and so on, are cyclic heads: such heads define the *phases* that trigger Spell-Out.
(Embick, 2010, p. 51)

Other functional categories like C or D can also be phases, as argued for in several recent approaches to phase theory. In any case, we will focus here only on *v*, which is also the introducer of EAs, as discussed above.

A version of the *Phase Impenetrability Condition* (PIC) is also adopted in Embick's work. Concretely, the complement domain of a given cyclic head is inaccessible for further PF computation when a higher cyclic head is spelled out.[13] As in other approaches to the PIC, we assume that the head of the phase, its specifier, and adjoined material to the projection of that head are accessible for further computation; that is, edge material including the phase

[13]Embick's definition of the PIC is given in (i):

(i) Material in the complement of a phase head that has been spelled out is not active in subsequent PF cycles. That is, the complement of a cyclic head *x* is not present in the PF cycle in which the next higher cyclic *y* is spelled out. (Embick, 2010, p. 54)

This definition is connected to Chomsky's (2001) weak version of the PIC (see Gallego, 2010 for a detailed discussion on weak vs. strong PIC), according to which a given phase head is evaluated only at the next phase level. As noted by Richards (2011), the two versions of the PIC are introduced only in relation to the non-phase head T. The point is whether or not T can see inside the *v*P phase. In Embick's version of the PIC, it is ensured that T can see the $\sqrt{}$, which seems to be the right empirical result (e.g., tense allomorphy conditioned by arbitrary Roots in English). In the main text, we assume a more basic notion of the PIC (see 39) closer to the first version given by Chomsky (2000), where the reference to "the next phase head" does not seem necessary (see also Chomsky, 2008, p. 159, footnote 24). However, see footnote 18 for more discussion.

head is active for the higher phase. However, edge material does not include heads incorporated by head movement or by other processes that produce complex heads. In other words, a complex head structure does not modify the cyclic structure of a given phase head. To our knowledge, Marvin (2002) was the first in observing this point.[14] Her formulation of the PIC is given in (39):

(39) H and its edge are spelled out at the next (strong) phase. The domain of H is spelled out at the phase of HP. A head *h* adjoined to H is in the domain of H.

(Marvin, 2002, p. 26)

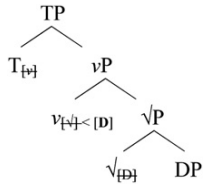
The last clause of this definition ensures what we have just observed: head movement does not affect the cyclic structure in which it is involved. Evidently, this is a stipulation that, as far as we can tell, does not follow from any notion of *edge*, but is forced by empirical facts (cyclic structure within words, incorporation phenomena and head opacity in general; see also Matushansky, 2006).[15]

In what follows, we show how this version of phase theory allows us to derive the basic properties of CL-*insertion* and, at the same time, to make some specific predictions about the timing of CL-*insertion*.

5.1. CL-*insertion* and cyclic heads

Recall again the syntactic configuration created by the absence of an EA in Spec,*v*P (cf. 27):

(40)



After head movement from $\sqrt{}$ to T,[16] a complex head with a surviving D feature on the cyclic head *v* is formed. Thus, the structure that PF receives has the following form:[17]

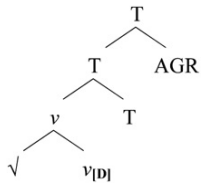
[14]We are grateful to Dave Embick and Pablo Zdrojewski for pointing out Marvin's work to us.

[15]What the empirical facts lead us to conclude is that in a complex phase head only the label of this complex head is visible for the computational system. So, for a given phase head Ph, the edge of Ph is Ph^{0max} (in the sense of Chomsky, 1995) and non-phase material above Ph^{0max}. Although this observation does not derive the notion of *edge*, it seems to have some conceptual motivation.

[16]We remain neutral about the syntactic or PF nature of head movement.

[17]We are assuming that a dissociated agreement node (see Embick, 1997) is added at PF as a result of *Agree*.

(41)

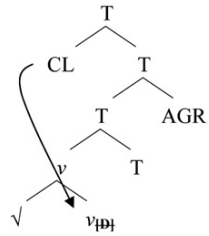


As mentioned above, if the D feature on *v* is not eliminated, the derivation is aborted given (24). In Spanish and other Romance languages, however, a clitic can be inserted in order to satisfy this D feature. What we need now is an explicit mechanism for this process. In other words, we have to give an answer to the question (B) presented in the introduction:

(B) How is CL-*insertion* implemented at PF?

We propose that CL-*insertion* is subject to the same cyclic constraints that apply to other syntactic and morphological processes. In other words, a clitic can be inserted at the top of the complex head T if and only if the surviving subcategorization feature is visible in the cycle in which the clitic can be inserted. As shown in (42), this is exactly the case. In effect, by the PIC in (39), *v*, as the head of the phase, is accessible for further computation, although material in its complement is not:

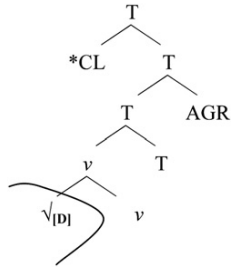
(42)



A very important prediction of this system is that unsatisfied categorial features on $\sqrt{}$s are not visible for CL-*insertion* because they are located in the complement of the phase head. Thus, our system captures in a principled way the general observation that expletive-like elements are not attested for IAs. Only categorial features on T or *v* are subject to PF-repair in the sense we are proposing. As an illustration, consider a situation in which a $\sqrt{}$ with a D feature is not merged with a DP in the syntax. Under this scenario, $\sqrt{}_{[D]}$ is sent to PF with its D feature not discharged. Once in PF, CL-*insertion* is impossible because the D feature is in the complement domain of *v* and, consequently, invisible for further computation.[18]

[18]Jairo Nunes (p.c.) and an anonymous reviewer wonder whether the same facts can be captured under a less restrictive version of the PIC (say, Embick's version in footnote 13). We think that the answer to this question depends on several assumptions related to the position of

(43)



This approach explains why null objects with arbitrary reference in Spanish and other Romance languages (see Rizzi, 1986 and much subsequent works) never occur with overt clitics, but implicit EAs like the ones we are addressing here do.[19] Notice, first, that null objects are not allowed under normal circumstances:

(44) a. *Juan compró.
Juan bought.3sg

b. *Juan hace.
Juan makes

morphological clitics and to their phase nature. If clitics are inserted in the C-domain, then the clitic cannot see the Root under that version of the PIC (and, of course, under any current version of the PIC). But assume that clitics are indeed inserted on T. Then, it seems that Root properties are visible in the T domain, unless clitics are cyclic nodes (i.e., D nodes). If this is the case, a clitic can never see the Root regardless of whether or not it is adjoined to T.

[19]Indeed, the prediction is more general. Consider the case of impersonal 3rd person plural in Romance. As noted by Cinque (1988, p. 543), arbitrary readings with null 3rd person plurals are only available with transitive or unergative verbs, but never with unaccusatives:

(i) Lo encontraron muerto.
him found.3pl dead
'They found him dead.'

(ii) Telefonean.
telephoned.3pl
'They telephoned.'

(iii) *Llegaron temprano. (OK under the referential reading)
arrived.3pl early
'They arrived early.'

Under our analysis, the ungrammaticality in (iii) follows straightforwardly because of the PIC. This means that plural marking in these contexts is also triggered by an unsatisfied categorial feature related to the EA. Notice however that the arbitrary SE/PLURAL alternation is not semantically vacuous: the sentence in (ii) for instance cannot be uttered in the same context as an impersonal SE sentence. We conjecture that categorial features have to be decomposed in different subtypes with different semantic import. We cannot offer here a semantic analysis of arbitrary readings, but we would like to stress that the contrast in (i)/(ii) and (iii) — which is not easily derived under current assumptions — gives additional support to a phase approach as the one we are pursuing here. We are grateful to Jairo Nunes (p.c.) for drawing our attention to this point.

c. *Juan corta.
Juan cuts

However, null objects are attested in contexts where a human and generic reading is available, as noted by Rizzi (1986). Some Spanish examples are given in (45):

(45) a. Los fantasmas asustan.
the ghosts frighten.3pl

b. La lectura ayuda.
the reading helps

c. El psicoanálisis cura.
the psychoanalysis cures

These examples seem to form a minimal pair with impersonal SE constructions, where a similar generic and human reading is obtained but where, at the same time, CL-*insertion* is mandatory (cf. 36b):

(46) Se trabaja bien en este lugar.
SE works well in this place
'One works well in this place.'

This absence versus presence of CL-*insertion* in IA and EA positions is a specific prediction of our system, as we have already noted. Nevertheless, it remains to be answered how the examples in (45) are derived. One possible analysis is suggested by Rizzi (1986): null arbitrary objects in cases like (45) are *pro* licensed and identified by V. If this is the case, *pro* just merges with $\sqrt{}$ and discharges the D feature on $\sqrt{}$. Another possible alternative could be that $\sqrt{}$ has no D feature on it from the starting point of the derivation and, as a consequence, no DP merges with it. Under this scenario, no subcategorization conflict arises and the Encyclopedia is in charge of the interpretation of the $\sqrt{}$ domain (see Embick & Marantz, 2008 and the references therein). In other words, the sentences in (45) and (46) are interpreted via a different underlying mechanism.[20]

[20]That the interpretative mechanism for this type of implicit objects is different from the interpretation of arbitrary SE seems to be empirically correct. In a sentence like (i), the implicit object can be interpreted either as animate or inanimate. What determines this type of ambiguity is the particular semantics of the Root. If the interpretation of the implicit object depended on a default mechanism at LF like in impersonal SE contexts (see Section 4), then this ambiguity would not be derived.

(i) Ese cuchillo corta.
that knife cuts

Other particular interpretations of implicit objects can also be derived from the Encyclopedia (e.g., *Juan toma*, "John drinks" meaning that Juan drinks alcohol).

It should be possible to distinguish these alternatives on empirical grounds. In principle, both raise the question of why arbitrary *pro* insertion or the lack of a D feature on *v* is not possible in EA position. If any of these options were possible, we would expect impersonal SE *without SE* in finite clauses in Spanish, contrary to fact:

(47) a. Aquí *(se) puede fumar.
here (SE) can.3sg smoke

b. *(Se) castiga a los culpables.
(SE) punishes to.acc the culprits

However, this could be a hasty conclusion both for empirical and conceptual reasons. Consider the nature of *real* passive sentences, which, as is well known, have an implicit agentive meaning, as the presence of *by*-phrases shows:

(48) Juan fue reprimido por la policía.
Juan was repressed by the police

Let us then assume that the structure of an analytic passive is indeed a case where *v*P does not have a D feature on *v*, an option that, by hypothesis, is linked to the absence of inflectional features on *v*. That is to say, fully defective *v* without a D feature is an analytic passive. The licensing of *by*-phrases in passives can be related to this particular configuration straightforwardly if it is the case that the presence of a D feature on *v* is incompatible with an agentive *by*-phrase. Absence of categorial specification on *v*, on the other hand, leaves room for an agent to be realized as a PP. If this is correct, we can also explain why *by*-phrases are not licensed in contexts of passive/impersonal SE sentences:

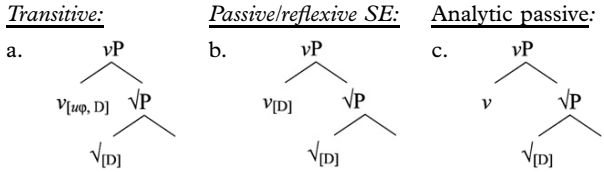
(49) a. *Se reprimió a los maestros por la policía.
SE repressed.3sg to.acc the teachers by the police

b. *Se destruyeron los puentes por el enemigo.
SE destroyed.3pl the bridges by the enemy

This tentative conjecture about analytic passives is exactly what is expected on our assumptions about inflectional and subcategorization features. So far, we have assumed that C or *v* can be selected from the numeration without φ-features. There is no reason, we think, why this cannot also be the case with subcategorization features. At the same time, this idea leads us to conclude that argument structure alternations — and, specifically, the passive alternation in all its variants — are just an epiphenomenon that results from the possible combinations of inflectional and subcategorization features. Thus, there is not a special voice feature that gives us the different possible semantic and syntactic expressions related to *voice*; instead, what we have is different degrees of formal

feature realization on v. As for $v_{[DO]}$, we have the following combinations in the vP domain:

(50)



Whenever C-T is φ-complete, (50a) is a typical transitive structure. (50b) is the passive SE structure, if C-T is person-defective, or the reflexive structure, if C-T is φ-complete. (50b) can also be an instance of the anticausative SE when v is [CAUSE]. Finally, (50c) is the analytic passive, the most underspecified version of v.

This approach — to the extent that it captures broad generalizations on argument alternation — favors an analysis of the null generic objects in sentences like (45) in terms of absence of subcategorization features on $\sqrt{}$, instead of an arbitrary *pro* in object position.

Before concluding this section, we should complete the picture by mentioning another specific prediction of our system: analytic passives cannot occur with arbitrary SE. There are two reasons for this. First, a D feature cannot occur on $\sqrt{}$ for the locality reasons previously adduced. Second, if the D feature is inserted on v, then we obtain the passive or impersonal SE, not the analytic passive. Nevertheless, this prediction seems to be falsified by empirical data: analytic passives do occur in impersonal SE contexts:

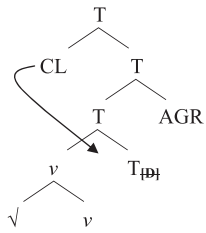
(51) a. Cuando ***se*** es condenado por los jueces, . . .
when SE is sentenced by the judges
'When one is sentenced by the judges . . .'

b. Aquí, ***se*** es reprimido por la policía.
here SE is repressed by the police
'Here, one is repressed by the police.'

As the compatibility with *by*-phrases shows, these sentences are real cases of analytic passives. However, we believe that examples like (51) do not constitute counterevidence to our system; rather, they are exactly what we predict once they are explored more carefully. What should be kept in mind is that our system only prevents D from being associated with the Root whenever there is no DP merging with it in the syntax. Moreover, we predict that an analytic passive cannot have an underlying $v_{[D]}$. Yet, there is another alternative — namely, it could be the case that T is associated with a D feature. Plainly, this is just the so-called EPP-property of T (see, for instance, Chomsky, 1995). Therefore, the underlying representation for analytic passives with SE should

be like in (52), where T has a D feature that is satisfied by merging the clitic at PF in the way previously explained:

(52)



We believe that this is a good result both on conceptual and empirical grounds. Conceptually, our system leaves room for a more general theory of expletive insertion that can be extended to well-known cases of expletive insertion in languages like English. On the empirical side, we expect impersonal SE constructions to behave differently intra- and cross-linguistically. Regarding Romance languages, it is well known that not every impersonal SE behaves in the same way (see Cinque, 1988; Dobrovie-Sorin, 1998; D'Alessandro, 2007, among many others). This is also the case with impersonal SE in the Spanish grammar. Crucially, sentences like (51) do not pattern exactly like impersonal SE in transitive contexts. A clear piece of evidence is that they have a different distribution in non-finite clauses, as first noted by Cinque (1988) for Italian (see also Dobrovie-Sorin, 1998): whereas impersonal SE in transitives can occur in absolute clauses, analytic passives with SE cannot. In this respect, compare the following minimal pair:

(53) a. Al castigar***se*** a los culpables...
to.the to.punish.SE to.acc the culprits
'Punishing the culprits...'

b. *Al ser***se** castigado...
to.the to.be.SE punished
'One being punished...'

Cinque stipulates that there are two kinds of impersonal and nominative SE, a [+arg] SE and a [-arg] one. Argumental SE underlies transitive and unergative SE constructions, whereas non-argumental SE is instantiated in passive and unaccusative verbs. According to Cinque, only argumental SE can occur in non-finite clauses (see Dobrovie-Sorin, 1998 for criticism and an alternative analysis). In our analysis, this stipulation is no longer needed. Let us see why.

Pérez Jiménez (2008) has presented compelling evidence in favor of the idea that absolute clauses have to be analyzed as a case of predicate fronting to Spec,TP. She claims that this movement is EPP-based because of the

properties that this type of non-finite T has. She proposes that non-finite T in absolute clauses is specified for an EPP_{pred} feature. A simplified representation of this predicate movement is given in (54) (see Camacho, 2011; Pérez-Jiménez, 2008; for detailed discussion):

(54) $[_{CP}$ C $[_{TP}$ PredP $[_{T'}$ $T_{\not{EPP}}$ $[_{AspP}$ SUBJ t_{PredP} ...

Assuming this analysis, the contrast in (53) is derived in our system in a very simple way. A D feature on T (i.e., an EPP-like property) is in complementary distribution with EPP_{Pred} and, as a consequence, the sentence (53b) is ruled out: T with an EPP_{Pred} feature cannot be optionally associated to a D feature, as it is the case in finite clauses.

Interestingly, this analysis is supported by languages with productive stylistic fronting, like Icelandic, where the expletive *það* and stylistic fronting are in complementary distribution (see Holmberg, 2000). In this language, impersonal passive sentences (among other contexts) are introduced by an expletive (*það*) or by a category moved by stylistic fronting. Verb initial sentences are not allowed in these contexts:

(55) a. Það hefur komið fram að *það* hefur verið fiskað
Exp has come forth that Exp has been fished
í leyfisleysi a chílensku fiskisvæð*i*
illegally in Chilean fishing-zone
'It has appeared that illegal fishing has taken place in the Chilean fishing zone.'

b. *Fram* hefur komið að *fiska*ð hefur verið ...

c. *Hefur komið fram að hefur verið fiskað ...

(Holmberg, 2000, pp. 451–452)

Crucially, the expletive and the moved constituent cannot co-occur:

(56) a. **Fram* hefur *það* komið að ...
forth has Exp come that

b. **það* hefur *fram* komið að ...

(Holmberg, 2000, p. 452)

This complementary distribution parallels what we have observed for Spanish: SE-insertion with analytic passives is impossible in contexts of absolute clauses. The difference from Icelandic is that SE-insertion is always blocked by the movement of the PredP in (54). This follows from our proposal because predicate movement, a syntactic operation, blocks CL-*insertion*, a morphological operation.

In short, we have presented the basic mechanism of CL-*insertion* at PF as a repair strategy. We have seen that this simple mechanism accounts for a set of

intriguing facts such as the absence of CL-*insertion* in object position or the presence of CL-*insertion* with analytic passives. At the same time, we have suggested a new way to deal with argument structure alternations that makes no reference to voice features of any kind. Argument structure alternations, according to us, are just an epiphenomenon that results from different possible combinations of the inflectional and subcategorization features on functional nodes.

5.2. On the distribution of post-syntactic clitics

We have to account for other peculiar properties of morphological clitics in Spanish. There are at least three that are relevant in the context here: (i) the agreement behavior of morphological clitics, (ii) their placement in clitic clusters, and (iii) their particular morphological marking. As we show in this subsection, all these properties follow from the system we are proposing without altering any of our basic assumptions. Let us see what these properties are and how they are derived.

Concerning agreement, a post-syntactic clitic always agrees with the valued φ-features of the T head to which it is adjoined. Sentence (57) illustrates this fact with reflexives/reciprocals:

(57) a. Yo me amo.
I me love.1sg
'I love myself.'

b. Vos te amás.
you you love.2sg
'You love yourself.'

c. Él se ama.
he SE loves
'He loves himself.'

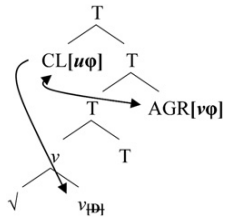
d. Nosotros nos amamos.
we us love.1pl
'We love ourselves/each other.'

e. Ellos se aman.
they SE love.3pl
'They love themselves/each other.'

This fact is derived in the following way. First, we assume that *Agree* is an all-the-way-down operation that can apply in the path from syntax to PF. In the syntax, *Agree* generally applies between a functional head (the Probe) and a phrase (the Goal). A Probe or Goal by goal with unvalued φ-features seeks a Goal with the relevant, non-distinct features that can match and value its features. Some notion of *closeness* plays a crucial role in this system: the

probe agrees with the closest DP in its complement domain (Chomsky, 2000, 2001). We assume that at PF the mechanics of *Agree* is exactly the same but reduced to the domain of complex heads. That is to say, a terminal node in a complex head with unvalued φ-features seeks a closer goal with a set of non-distinct features that can value its features. With reference to the complex head in (41), the node AGR is the closest node with the set of relevant matching features that can value those on the clitic.[21] The result of CL-*insertion* and *Agree* is given in (58):

(58)



Notice that we are assuming that the clitic has a set of unvalued φ-features (see also Hornstein, 2001; Rooryck & van den Wyngaerd, 2011; Schäfer, 2008, among others). We propose that this has to be the general case with morphological clitics. The rationale behind this hypothesis is that valued features on clitics render the clitic interpretable for LF, as it is generally assumed for D-like elements with valued inflectional features. If this is correct, then a valued clitic cannot be inserted at PF under the assumption that interpretable features cannot be inserted in the morphology (Embick, 2000). This is then why a morphological clitic has to be inserted with a set of unvalued φ-features.

The particular position of morphological clitics also follows from our system. The clitic can be inserted only on the top of T regardless of its status as external or internal argument. As is well known in Spanish, reflexive, anticausative, passive and impersonal clitics always occur in the first position of the clitic cluster. A good illustration is the reflexive/reciprocal SE. In the general case, IO clitics precede DO clitics unless the DO is reflexive:

(59) a. Juan entregó el acusado a las autoridades.
Juan gave.3sg the defendant to the authorities
'Juan gave the defendant to the authorities.'

b. Juan **se$_{IO}$** **lo$_{DO}$** entregó.
Juan Cl.IO Cl.DO gave

c. Juan **se** entregó a Pedro.
Juan SE gave to Pedro
'Juan gave himself to Pedro.'

[21]Notice that T values its φ-features in the syntax and cannot be deleted in the morphology, a standard assumption.

d. Juan **se$_{DO}$** **le$_{IO}$** entregó.
Juan Cl.DO Cl.IO gave

As we can see, the ordering between IO and DO is reversed in reflexive contexts. In general, every morphological clitic in standard Spanish has to occur in the highest position of the clitic cluster.[22] From a purely syntactic point of view, this is an unexpected pattern subject to intense debate in the literature at least since Perlmutter (1971) (see also Bonet, 1991; Cuervo, in press; and Ordóñez, 2002, among many others). In our system, this is derived because of the counter-cyclic character of CL-*insertion* at PF in combination with the need for probes to dominate or c-command goals. Hence, the conclusion is that post-syntactic clitics have to be located on the top position of T even when their presence is required by specific properties of *v*.

Finally, the post-syntactic clitics we are exploring here always appear with one of the oblique forms of the personal pronoun system (*me*, *te*, *nos*, *se*, etc.). Syncretism does not allow us to distinguish whether these forms are real instances of accusative clitics (as is the case in some Germanic languages) or correspond to some default, oblique marking. In any case, they are clearly not nominative. The reason for this is, again, the counter-cyclic property of morphological clitics. In other words, the Case form of a morphological clitic can only be determined once the syntactic Case valuation has taken place. As nominative case in the majority of the contexts we are analyzing has been syntactically determined, the morphological component has to assign a non-nominative case form to post-syntactic clitics. The exception is impersonal SE where there is no nominative case valuation in the syntax. However, it is a standard assumption that the form /*se*/ is the most unspecified one in the clitic system of Spanish. Therefore, we assume that this form is just the default realization of a third person clitic adjoined to T.

6. CONCLUSION

We have proposed that SE syncretism is a result of the PF-syntax connection. In particular, it arises only at PF when *v* introducing EAs does not have a specifier. Under this view, four related contexts involving the clitic SE are

[22]A note of caution is in order here. Our system *does not* predict that every morphological clitic should be higher than other clitics in every case. The specific prediction is that morphological clitics have to be in a position from which they can value their inflectional features against T. For instance, they cannot be in the *v* domain. With respect to their combination with syntactic clitics, other orderings are allowed in our system to the extent that the local relation between the morphological clitic and T is not interrupted. In this respect, syntactic clitics above impersonal SE are attested in Italian, and in some Spanish dialects the IO clitic can be above the reflexive one (see Ordóñez, 2002 for a specific analysis).

derived in a unified way.[23] The crucial element of our argument, however, is the role that functional nodes play in deriving the alternations we discussed. If our analysis is correct, much of the properties usually attributed to the notion of *argument structure* are in fact epiphenomenal, the result of, at least, the complex interaction between inflectional and subcategorization features in connection with well-formedness conditions at the PF interface.

With regard to these syntax-PF interactions, we have proposed an explicit mechanism for CL-*insertion* that not only accounts for the particular expletive-like properties of morphological clitics, but also explains why this repair strategy cannot apply to object position. This follows straightforwardly from the cyclic theory adopted in this chapter. In this respect, a theory of PF-repair as the one we have outlined here not only has a desirable restrictive property

[23] An anonymous reviewer wonders whether our analysis could be extended to explain other SE constructions in Spanish and Romance in general. Unfortunately, space considerations do not allow us to explore this issue in detail. However, some remarks are in order. First, Pujalte (in preparation) shows that reflexives in contexts of ditransitive verbs and the so-called optional SE/SI in Romance (see Armstrong, 2010; Campanini & Schäfer, 2010 for recent analyses) are easily accounted for under the present analysis. Consider briefly the case of optional SE constructions in Spanish:

(i) a. Juan (se) comió la torta.
Juan SE ate.3sg the cake
'Juan ate the cake.'

b. Juan (se) fumó el cigarrillo.
Juan SE smoked.3sg the cigarette
'Juan smoked the cigarette.'

Campanini and Schäfer (2010) argue that in the sentences where SE is present, there is a low applicative head under which the EA and the IA are generated. Such a functional head is absent in the sentences without SE. If this is the case, then our system predicts that the presence of SE is due to the lack of an EA on *v*. The relevant derivation would be the one in (ii):

(ii) $[_{vP}\ \boldsymbol{v}_{\mathbf{[D]}}\ [\sqrt{}\ [_{\text{ApplP}}\ \text{DP}\ [\text{Appl DP}]]]]$

In the same vein, Mare (in preparation) argues that the so-called *discontinuous reciprocal* in Spanish (see (iii)) can also be derived under our analysis. In this type of sentences, a reciprocal meaning arises only in the presence of a comitative phrase headed by the preposition *con* "with." That is, the sentence in (iii) is obligatorily reflexive whenever the *con*-phrase is absent. As Mare shows in detail, this complex pattern is derived under a minimal clause analysis, where the external and the internal arguments are generated as the specifier and the complement of the projection headed by *con*, respectively. Therefore, a configuration similar to the one we sketched in (ii) arises and the occurrence of SE in (iii) is derived.

(iii) Juan *(se) besó con Ana.
Juan SE kissed with Ana
'Juan and Ana kissed each other.'

More generally, our analysis predicts SE-insertion not only in contexts where the EA is absent, but also in contexts where the EA is generated in a position other than Spec,*v*P.

based on standard assumptions about local computation, but also allows us to make specific predictions that can be tested in several domains, SE-insertion being a prominent one.

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11

ARGUMENTS FROM THE ROOT VS. ARGUMENTS FROM THE SYNTAX

Lisa Travis

ABSTRACT

Malagasy, a Western Malayo-Polynesian language, has a rich morphological system that encodes shifts in argument structure and event structure. Assuming that complex morphology represents complex syntax, Malagasy can provide insights into the interaction of syntax and argument structure. In this chapter, I probe this interaction by investigating (i) changes in argument structure under nominalization and (ii) the complexity of the argument structure of roots in Malagasy. The argument structure of different verbal constructions behave differently when they are nominalized, and the range of argument structures of roots is as complex as the argument structure of morphologically complex verbs. I argue, using data from nominalizations, that external theta-roles come in three different types: (i) the type assigned by a combination of v and the theta-grid of root, (ii) the type assigned by v itself, and (iii) the type assigned by syntactic configuration alone. Further, I argue that roots show the same rich internal argument system as morphologically complex

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verbs, providing evidence for three types of external arguments in three different specifier positions: Spec, *v*P, Spec, ASPP, and Spec,$\sqrt{}$P. Data from the morphological system of Malagasy at first appears to support a close link between syntax and argument structure, but when looked at more closely, supports the view that roots have to have lexically specified theta-grids.

Keywords: External arguments, roots, Agent, Cause, adjectives, Instrument

1. INTRODUCTION

Malagasy is a particularly helpful language to investigate when considering issues of argument structure. Unlike a language like English, Malagasy has morphology that provides clues to argument structure distinctions. As morphology is added or modified, so is argument structure and event structure. In this context, I examine the role of roots in Malagasy to better understand their complexity. The underlying assumption is that bare roots in Malagasy are truly bare and that constructions containing bare roots are realizations of the basic argument structure of the lexical item. My conclusion from this investigation is that lexical items do carry argument information independent of syntax, perhaps encoded in traditional theta-grids; however, syntax is required to license the realization of some of these arguments. I also suggest that Instruments are the external arguments of the innermost event layer.

I start with an introduction to the relevant Malagasy morphology, arguing that Malagasy has an overt *v* whose realization changes depending on (i) whether or not there is an external argument[1] and (ii) whether the predicate is stative or eventive. Further, realization of *v* is both productive and recursive. Then I show that roots that are stripped of this *v* can still realize their arguments and that these realizations will depend on the information given by the roots themselves.

2. BRIEF INTRODUCTION TO MALAGASY SYNTAX

Before turning to the morphological details of Malagasy, I give a short introduction to some relevant aspects of Malagasy syntax. Malagasy is generally considered a VOS language though this characterization relies on

[1]The term 'external argument' within this chapter will always mean the argument that is highest in the argument structure, not the syntactic external argument, which may come from some lower position. To avoid confusion, I will refer to the grammatical external argument as the subject, and the semantic external argument simply as the external argument.

the controversial claim that the sentence final element is indeed a subject and not a topic (see, e.g., Pearson, 2005; Travis, 2006). As taking a stand on this debate is tangential to the issues of this chapter, I will accept the more traditional view (Keenan, 1976, 2000) that the final element is a subject.[2]

Another remarkable and related characteristic of Malagasy is the verbal morphology that encodes the role of this sentence final argument.[3] Leaving some details aside, Malagasy has morphology that encodes the role of Agent or Theme, as in (1a) and (1b) respectively. These verbal forms are traditionally labeled as Actor Topic or Theme Topic. A third form, the Circumstantial Topic form, given in (1c), marks the role of the subject as being neither Actor nor Theme. In the case we see below, the role is that of Instrument, but other possible roles are Benefactive, Place, Time, Reason (see Rajemisa-Raolison, 1971, pp. 112–113).[4]

(1) a. manasa lamba amin'ny savony ny lehilahy
PRES.AT-*AN*-wash clothes with.GEN' DET soap DET man
'The man is washing clothes with the soap.'

b. sasan'ny[5] lehilahy amin'ny savony ny lamba
PRES.wash.TT.GEN'DET man with.GEN' DET soap DET clothes
'The man is washing the clothes with the soap.'

c. anasan'ny lehilahy lamba ny savony
PRES.*AN*-wash.CT.GEN'DET man clothes DET soap
'The man is washing clothes with the soap.'

Note that both the passive (Theme Topic) construction and the Circumstantial Topic construction realize the external argument as a direct

[2]As one reviewer points out, this issue may not be orthogonal especially in the discussion of various types of 'passive' in Malagasy. The reader should keep this in mind.

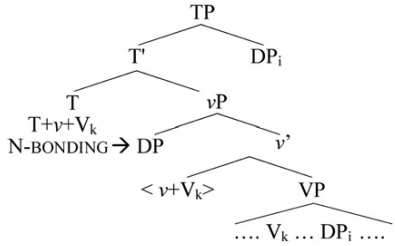
[3]Depending on whether the sentence final argument is seen as a subject or a topic, this morphology can be seen as marking voice or some sort of A'-agreement. In line with calling the sentence final DP the subject, I will call this morphological paradigm a voice paradigm, and call the construction in (1b) and all subsequent Theme Topic forms passives. One of the obvious advantages of analyzing the sentence final DP as an A'-element is that there are no minimality problems with moving a DP across the non-demoted Agent, which is in an A-position.

[4]Abbreviations used in glosses are: ACC, Accusative; APPL, Applied Affix; ASP, Inner Aspect (or mood morpheme Chichewa); AT, Actor Topic; CT, Circumstantial Topic; DEM, Demonstrative; DET, Determiner; EXCL, Exclusive; FUT, Future; GEN, Genitive; INCL, Inclusive; NEG, negative; OP, Object Prefix; PL, Plural; PRES, Present; PREP, Preposition; PST, Past; SG, Singular; SP, Subject Prefix; TT, Theme Topic. Items in italicized small caps are morphemes of the language.

[5]The apostrophe is used in Malagasy orthography to indicate N-bonding, discussed below, and which will become important later in the chapter. N-bonding is labeled as GEN in the glosses as the same process can be seen in possessive constructions: (*ny tranon-dRabe* 'Rabe's house'; *ny naman'ny ankizy* 'the children's friend'; *ny zavatry ny lehilahy* 'the man's thing'). Sometimes N-bonding is indicated by a hyphen, sometimes by an apostrophe, and sometimes simply by a change in the final vowel of the head noun (*zavatra*→*zavatry*).

argument within the *v*P. In other words, when some other argument is promoted to the subject position, the external argument is not demoted, i.e. does not appear in the Malagasy equivalent of a *by*-phrase. Guilfoyle, Hung, and Travis (1992) account for this by positing that the external argument remains in the highest specifier position within the predicate (today's Spec,*v*P) while another argument occupies the subject position. The verb moves out of the predicate to a higher head position. A morpho-phonological process, labeled N-bonding by Keenan (2000, p. 32), occurs between this head and the material in the lower specifier position. This is illustrated below.[6]

(2)



Now we turn to the parts of Malagasy morphology that are relevant to argument structure.

3. SYNTAX CREATES ARGUMENT STRUCTURE: PRELIMINARY SUPPORT

Because morphological complexity brings with it the complexity of argument structure in Malagasy, it is initially tempting to conclude that complex syntax is responsible for introducing arguments as in Borer (2005). Not only is it necessary to add morphology to introduce an external argument, the shape of this morphology has an effect on the type of external argument that is introduced. Below I first argue that Malagasy morphologically realizes *v*, and then I show that this morphology has three instantiations that mirror different types of argument/event structure.

[6]I have presented a simple version of this tree, but most likely the VOS word order of Malagasy is achieved through remnant VP movement (see Pearson, 1997; Rackowski & Travis, 2000). In other work, I have linked languages with VP fronting with languages that have processes such as N-bonding, which I analyze as D^0 movement. It is clear, however, that the external argument is not demoted and still behaves like a term (using vocabulary from Relational Grammar). Schachter (1976, 1996) gives arguments from a related language, Tagalog, that may also be applied to Malagasy.

3.1. *v* and Its Flavors in Malagasy

Malagasy verbs are mostly morphologically complex, derived from roots that are often used independently as nouns or adjectives. An example is given below where the nominal root *lahatra* 'order' becomes a transitive verb with the addition of the prefix *an-*.[7] Malagasy has no copula.

(3) √lahatra, n. 'order' (from Abinal & Malzac, 1988, p. 370)

a. Tsara lahatra[8] ny boky
good order DET book
'The books are in good order.'

b. *n+an+lahatra* → nandahatra 'to put in order'
Tsy nandahatra tsara ireo vata ireo hianareo[9]
NEG PST.AT-*AN*-order good DEM.PL case DEM.PL 2PL
'You didn't put those cases in good order.'

The form of this prefix, however, varies depending on the exact nature of the external argument. There are many pairs for which the prefix *–i* appears with the inchoative (unaccusative/reflexive) member of the pair, and the *an-* prefix with the transitive (lexical causative) member of the pair. For example, the root *lahatra* may also take the prefix *i-* and now the form is intransitive with the Theme as the grammatical subject. These forms may be either stative or eventive.[10]

(4) Milahatra[11] tsar ny miaramila
PRES.AT-*I*-order good DET soldier
'The soldiers are in good order.'

[7]As with most languages (see, e.g., Harley, 1995 for Japanese), the morphology of the lexical causative alternation is not completely productive.

[8]While this example might look adjectival, the following text from the web shows more clearly that *lahatra* is, in fact, nominal.

(i) araka ny hevitro aloha dia misy *ny lahatra* sy ny anjara
according DET opinion.GEN.1SG before dia PRES.there.is DET order and DET destiny
raha mivavaka ianao
when PRES.AT-*I*-pray 2SG.NOM
'In my opinion, there exists order and destiny if you pray.'
from *forum.serasera.org/forum/message/m3f5ef41b2d756* (panodina — 08/10/2003 21:25), accessed on 14 February 2011.

[9]Writing the second person pronoun with a word initial *h* comes from an older orthographic convention used by Abinal and Malzac.

[10]*i-* is traditionally glossed as an Actor Topic morpheme though the Theme is the subject because the Theme is the highest argument in this case. Theme Topic morphemes are argument structure changing morphemes that allow something other than the external argument to be the subject of the clause.

[11]*m-* is usually glossed as present though, in fact, its function is probably more abstract and the present is actually a null morpheme. *m-* will appear in citation forms and accounts for why Malagasy grammarians will discuss *man-*, *mi-*, *ma-* rather than *an-*, *i-*, and *a-*.

More examples of this alternation are given below with one example included to show that even in the absence of an alternation, the prefix *an-* may appear to license an external argument.[12]

(5) ALTERNATIONS

a.	*mihisatra*	X move slowly	b.	*manisatra*	Y move X slowly
	milona	X soak		*mandona*	Y soak X
	misitrika	X hide		*manitrika*	Y hide X
	No alternation:			*manome*	Y give X to Z

There is a third prefix that may appear in *v*, *a-*. When this prefix appears, the predicate is always stative and there is no additional external argument.

(6) $\sqrt{}$*loto*, N. 'dirt, filthiness': *m+a+loto* → 'to be dirty'
maloto ny akanjo
PRES-*A*-dirt DET clothes
'The clothes are dirty.'

More examples using this stative prefix are given in (7).

(7) STATIVE ROOTS

a.	*dio*	cleanliness	b.	*m-a-dio*	clean
	zava	light, clarity		*m-a-zava*	clear
	zoto	diligence		*m-a-zoto*	diligent

A summary of the types of *v* found in Malagasy is given below.

(8) Flavors of *v*

LEXICAL CAUSATIVE	UNACCUSATIVE	STATIVE
an-$\sqrt{}$	i-$\sqrt{}$	a-$\sqrt{}$
Make verbal	Make verbal	Make verbal
Add external arg	–	–
Eventive	Eventive/Stative	Stative

[12]Since the morphological realization of *v* can be idiosyncratic, *an-* does not always appear when there is an external argument. There are cases where *i-* appears on agentive verbs such as *mividy* 'buy', *mivarotra* 'sell', *mihinana* 'eat'. These verbs are never part of a lexical causative/inchoative pair. It is much rarer to have a verb with *an-* that is not agentive (e.g., *mandeha* 'go'). I know of no cases where *a-* (see (7)) introduces an external argument (though I discuss apparent cases below).

3.2. Other Instantiations of *v*

These three morphemes, *an-*, *i-*, and *a-*, attach not only to roots but also to complex stems. I discuss two cases below.

3.2.1. *AN+HA*, *I+HA*, *A+HA*

All three prefixes may attach to stems that already contain the prefix *ha-*.[13] Just as with the cases we have just seen, *an-* has an external argument, *i-* does not, and *a-* creates a stative predicate.

(9)	*manka*	'Y make X A'	(*m-an-ha-*$\sqrt{}$):	makes verbal, has an external argument
	hery	strong_{A}	*mankahery*	Y make X strong
	mamy	sweet_{A}	*mankamamy*	Y make X sweet
	rary	pain_{N}	*mankarary*	Y make X sick

(10)	*miha*	'X become A'	(*m-i-ha-*$\sqrt{}$):	makes verbal, change of state, no external argument
	tsara	good_{A}	*mihatsara*	X get better
	ratsy	bad_{A}	*miharatsy*	X get worse

The case of *a-* added to *ha-* is a bit more complicated and requires more background on Malagasy to understand, and once *a-* is investigated, we will understand the contribution of *ha-*. The first relevant fact about Malagasy is that it is a language that does not entail the completion of the event.[14] As Phillips (1996) has shown, while the implicature in (11) is that the chicken is dead, this is defeasible.

(11) Namono ny akoho izy
PST.AT-AN-kill DET chicken 3
'He killed the chicken.'

... fa mbola tsy maty ilay akoho
... but still NEG dead that chicken
'... but that (aforementioned) chicken is still not dead.'

As shown in (12) below, however, completion of the event is entailed when the prefix *a-* is added to the prefix *ha-*.

(12) adapted from Phillips (1996)
a. nisambotra ny alika ny ankizy
PST.AT-*I*-captive DET dog DET child
'The child caught the dog.'

[13] I would argue that this use of *ha-* never occurs without a *v* (either *an-*, *i-*, or *a-*). There is another nominal *ha-* that is used in the nominalization system ($\sqrt{}$*tsara* 'good': *hatsara* 'goodness'). The nominalization system will become important below.

[14] This has been claimed to be true of other languages as well, such as another Austronesian language, Tagalog (Dell, 1983), as well as Mandarin (Tai, 1984) (but see Soh & Kuo, 2005).

b. . . . nefa faingana loatra ilay alika
. . . but quick too that dog
'. . . but the dog was too quick.'

(13) a. nahasambotra ny alika ny ankizy
PST-A-HA-captive DET dog DET child
'The child caught the dog.'
b. #. . . nefa faingana loatra ilay alika
'. . . but the dog was too quick.'

This raises two questions. Where does the telic meaning come from? And if there is a stative *a-* that does not add an external argument, how is an external argument introduced in (13)? I will argue, using ideas from Phillips (1996), that telicity is introduced by the morpheme *ha-*. More controversially, I follow earlier work (Travis, 2000a) where I claim that *ha-* as a telic marker can introduce a Cause argument.

While we have just seen that *a-+ha-* is used to introduce a telic reading to a predicate, this morphological complex also has other uses. For example, to create predicates that are translated by achievement predicates in English (*find, discover*), one uses the *a-+ha-*complex.

(14) a. *mijery* 'to look at' b. *mahajery* 'to notice' √JERY
c. *mandinika* 'to examine' d. *mahadinika* 'to remark' √DINIKA

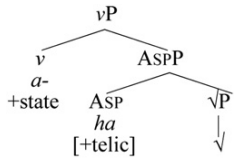
In fact, there are predicates that only appear with *a-+ha-* (taken from Rabenilaina, 1985, p. 372).

(15)

mahazo	'to understand, to seize'	
mahalala	'to know'	
mahatsiahy	'to feel, to remember'	
mahatsikaritra	'to remark'	
mahatsiaro	'to perceive'	
mahahay	'to know'	(>mahay)
mahahita	'to see'	(>mahita)

To create a syntactic structure from this morphological complex, I assume that *ha-* is in Inner Aspect (Travis, 2010),[15] and, as proposed above, *a-* is a flavor of *v*.

(16)



[15]Since I will not be discussing Outer Aspect in this chapter, I label Inner Aspect as ASP on the tree.

We have not yet answered the question of how the external argument is introduced. We turn to this in the Section 4, but first look more at the productive use of *v*-prefixes.

3.2.2. Recursive *an-*

The prefix *an-* can also be added recursively to forms that already contain *an-*, *i-*, or *a-*, once another prefix, *f-*, has been added (see Hung, 1988; Travis, 2000b). This is how productive causatives are formed, which is what is expected given that *an-* adds an external argument. In (17a) we see how a productive causative is formed on an unaccusative base, and in (17b) how it is formed on a lexical causative base.

(17) a. *an* + f + [*i* + √] (unaccusative plus extra argument)
b. *an* + f + [*an* + √] (lexical causative plus extra argument)

Examples of full forms are given in (18) below.

(18)

	STEM		PRODUCTIVE CAUSATIVE	
a.	*misitrika*	'X hide'	*mampisitrika*	'Z make X hide
b.	*manitrika*	'Y hide X'	*mampanitrika*	'Z make Y hide X'

The goal of this discussion is to show how morphology exemplifies a syntax, which in turn represents particular argument structure and event structure configurations. Given the close mapping between the morphosyntax and argument structure, there are reasons to believe that, at least for the external argument, syntax is responsible for argument introduction.[16] We will see in the next section, however, that syntax cannot be held completely responsible for argument structure, and that some information must come from the lexical item itself.

4. SYNTAX CREATES ARGUMENT STRUCTURE: A PROBLEM

We will now see that an external argument in Malagasy can be introduced not only in the Spec,*v*P, but also in Spec,AspP. Important for the present discussion is the fact that the *a-*+*ha-* construction will receive a different interpretation depending on the root and further, Spec,*v*P and Spec,AspP arguments will act very differently under nominalization. I conclude that the argument in Spec,*v*P is generally introduced through a co-operation of the syntax and the argument structure encoded in the root while the argument in Spec,AspP is introduced purely by the syntax.[17] Given this distinction, in spite

[16]As pointed out by Terje Lohndal at the workshop, the morpho-syntactic system of Malagasy has less to say about the introduction of internal arguments. We will see later that roots appear to have a complete internal argument structure.

[17]We will see below a case where *v* on its own adds an argument.

of the fact that Malagasy looks like a language where additional morphology (and syntax) creates additional argument structure, we can no longer put the onus of argument structure on the syntax alone — some information must come from the root itself.

4.1. Other uses of (*m*)*aha*- (from Phillips, 1996)

To begin the discussion of the role of syntax in the introduction of arguments, we return to the *a*-+*ha*- morphological complex that was introduced above. In grammars, two uses of *a*-+*ha*- are given (generally cited as *maha*-) beyond the completive (and achievement) use. These two are the abilitative and the causative. The goal of Phillips (1996, 2000) was to show that with the appropriate representation, all uses could be collapsed into one.

Below we see *a*-+*ha*- used in its abilitative form. In (19) below, we can see when *an*- is replaced by *a*-+*ha*-, the resulting construction is often translated as having an abilitative meaning.

(19) ABILITATIVE (from Phillips, 2000)

a. Nanongotra ravina tamin'ny tanana Rabe
PST.AT-*A*-pull.out root PST-with.GEN'DET hands Rabe
'Rabe pulled out the roots with his hands.'

b. Nahaongotra ravina tamin'ny tanana Rabe
PST.AT-*A*-*HA*-pull.out root PST-with.GEN'DET hands Rabe
'Rabe was able to pull out the roots with his hands.'

The relationship between the abilitative and the completive meaning has been pointed out in Phillips (1996, 2000) and discussed further in Travis (2005a, 2005b), using work of Bhatt (1999). What is important for the present chapter is the fact that the external argument is still assigned in spite of the fact that the *an*- prefix in *v* has been lost.[18] The last use of *a*-+*ha*-, however, can give us some insight into this problem. As we can see below, it is clear that *a*-+*ha*- can add a Cause type of argument.

(20) a. Tsara ny trano
beautiful DET house
'The house is beautiful.'

b. Mahatsara ny trano ny voninkazo (Phillips, 2000, p. 90)
PRES-*A*-*HA*-beautiful DET house DET flowers
'The flowers make the house beautiful.'

[18]The *an*- prefix is also lost in the Theme Topic (passive) form of the verb. Since the nature of the external argument remains the same in these cases, I assume that the passive morphology itself is capable of discharging the external theta-role similar to the proposal of Baker, Johnson, and Roberts (1989).

Note that the abilitative reading is not always available. It appears that it is only possible in cases where Agents are independently available. When *a-+ha-* is added to an unaccusative verb such as *tonga* 'arrive', the effect must be the addition of an external cause argument, just as it was with the adjectival root *tsara* 'good'. It cannot give the abilitative reading of the unaccusative verb.

(21) NO PURE UNACCUSATIVE ABILITATIVE

a. $\sqrt{}$*tonga* 'arrive' (Phillips, 2000, p. 103)

b. *mahatonga* 'able to make arrive'
≠ 'able to arrive'

c. *mahatonga* ny zanakao ho hendry ny fianarana
PRES-*A*-*HA*-arrive DET child.GEN.2SG FUT wise DET studies
'Studies make your child wise.'

Further, we can see below that the root *tsara* does not allow an agentive interpretation. The following sentence is at best strange since it can only mean that Rabe's presence makes the house beautiful.[19]

(22) # Mahatsara ny trano Rabe (Phillips, 2000, p. 90)
PRES-*A*-*HA*-beautiful DET house Rabe
'Rabe makes (is able to make) the house beautiful.'

In order to get the intended meaning, *an-* must be added to the root.[20]

(23) Manatsara ny trano Rabe (VR, July 2011)
PRES-*AN*-beautiful DET house Rabe
'Rabe makes the house beautiful.'

An- in *v*, then, can either license the Agent in the theta-grid of the root (in which case the *a-+ha-* form is abilitative), or it can supply an Agent when there is none in the theta-grid of the root (in which case the *a-+ha-* form is purely causative).[21]

We have arrived at the following problem. The complex *a-+ha-* appears to be adding an external argument, but we do not expect *a-* to be responsible as it is simply a marker of stativity, and *ha-* appears to add telicity. What I argue next is that telicity is responsible for the additional argument. In order to follow this argument, however, we need additional background on telicity in Malagasy.

[19]Not all of my consultants have accepted this piece of data from Phillips' work, but the generalization appears to be that the native speakers of the main dialect, Merina, accept this judgment.

[20]Many roots add *ana-* rather than *an-*. While a large percentage of roots beginning with *ts-* add *ana-*, not all of them do (e.g., *man+*$\sqrt{}$*tsaingoka* 'light fingered'→*manaingoka* 'to steal' (Abinal & Malzac, 1988, p. 749)). At this point I assume that the choice is determined lexically.

[21]This is not possible with all Agentless roots, however. *Tonga* has no agentive form (**manonga*/**manatonga*: VR August 2011). I thank Peter Svenonious and the argument structure group in Tromsø for comments on this issue.

4.2. Telicity in Malagasy

First let us recall the transitivity alternation in Malagasy. With the root $\sqrt{vory}$ below, we have the unaccusative member with the prefix *i-* and the lexical causative member with the prefix *an-*.

(24) *m-i-vory* *mivory* 'Y meet'
m-an-vory *mamory* 'X gathers Y'

The examples below show us again that Malagasy does not encode telicity in these forms of the verb. (25) shows that the endpoint for the lexical causative is defeasible.

(25) a. namory ny ankizy ny mpampianatra
PST.AT-*AN*-meet DET children DET teacher
'The teacher gathered the children together.'

b. . . . nefa tsy nanana fotoana izy
. . . but NEG PST.AT-have time 3
'. . . but s/he didn't have time.'

(26) shows that the suffixal form of the passive is also defeasible. Finally, (27) shows that the unaccusative form is also defeasible, though this is more difficult[22] (we will later compare this with a form that is not defeasible).

(26) PASSIVE[23]
a. Novorin'ny mpampianatra ny ankizy
PST-meet.TT.GEN'DET teacher DET children
'The children were gathered by the teacher.'

b. . . . nefa tsy nanana fotoana izy
'. . . but s/he didn't have time.'

(27) UNACCUSATIVE
a. Nivory ny olona
PST.AT-*I*-meet DET people
'The people met.'

b. ??# . . . nefa tsy nanana fotoana izy
'. . . but they didn't have time.'

In order to ensure telicity, each of these constructions — the lexical causative, the unaccusative, and the suffixal passive — have a parallel

[22]I have reported this piece of data elsewhere with a single ? but the numbers of consultants who do not accept this is growing.

[23]Recall that, if the sentence-final position is considered to be an A'-position, passive might be a misnomer. I prefer to consider 'topic' morphology to be argument changing morphology and therefore am labeling these structures as passives.

construction with different prefixes. We have already seen the prefixal complex used in (28) for the lexical causative — *a-+ha-*.

(28) ACTIVE TELIC ((*n*)*aha-*)
a. nahavory ny ankizy ny mpampianatra
PST-*A*-*HA*-meet DET children DET teacher
'The teacher gathered the children.'

b. #.... nefa tsy nanana fotoana izy
'.... but s/he didn't have time.'

The passive form is the prefix *voa-* (29), and the unaccusative form is the prefix *tafa-* (30). We can now compare the judgments of (27b) and (30b). While it is at best awkward to deny the end result of an *i-* unaccusative, it is impossible with a *tafa-* unaccusative.

(29) PASSIVE TELIC (*voa-*)
a. voavorin'ny mpampianatra ny ankizy
VOA-meet.GEN'DET teacher DET children
'The children were gathered by the teacher.'

b. # . . . nefa tsy nanana fotoana izy.
'. . . but s/he didn't have time.'

(30) UNACCUSATIVE TELIC (*tafa-*)
a. tafavory ny olona
TAFA-meet DET people
'The people met/were able to meet.'

b. # . . . nefa tsy nanana fotoana izy.
'. . . but they didn't have time.'

The morphological paradigm is summed up in the following table.

(31) TELICITY MARKERS

	LEXICAL CAUSATIVE	PASSIVE	UNACCUSATIVE
−TELIC	an-	-(V)na	i-
	m-an-vory (*mamory*)	vory+na (*vorina*)	m-i-vory (*mivory*)
+TELIC	a+ha-	voa-	tafa-
	m+a+ha+vory (*mahavory*)	voa-vory (*voavory*)	tafa-vory (*tafavory*)

4.3. External Arguments Added by Syntax

While this sets up a nice symmetrical system, something surprising happens when telicity is added to a predicate with no external argument. As we see below, not surprisingly, the unaccusative form of the verb cannot realize an external argument, either in the subject position (32a) or in a *v*P internal position (32b).

(32) a. * Nivory ny ankizy ny mpampianatra.
PST.AT-*I*-meet DET children DET teacher
b. * Nivorin'ny mpampianatra ny ankizy.

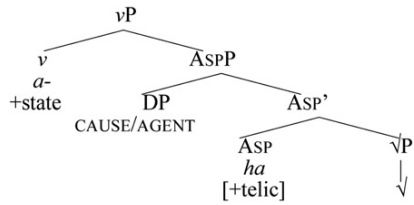
What is surprising, however, is that the telic form of the unaccusative can realize an external argument within the *v*P.

(33) Tafavorin'ny mpampianatra ny ankizy
TAFA-meet.GEN'DET teacher DET children
'The teacher was able to gather the children.'

Since nothing else has changed in this construction, I propose that it is the telic marker itself that adds the external argument. Further, because telicity is encoded in Inner Aspect, I assume that this unexpected argument is realized in Spec,AspP. What is important to note is that even the external argument, which usually appears with the verb, is also realized in Spec,AspP, but now this external argument has a non-volitional/causal flavor (see Travis, 2005a, 2005b for details, and Travis, 2010, p. 226 for morphological arguments from Tagalog that this argument is in Spec,AspP and not in Spec,*v*P).

Now we return to *a-*+*ha-*, how it is represented on the tree and how the arguments are realized. Following Phillips (1996, 2000), all three uses of *a-*+*ha-* are given the same account.[24] The prefixal complex has three characteristics: (i) it makes the predicate stative (*a-*); (ii) it introduces the entailment of completion (*ha-*); (iii) an external argument is introduced even if the root does not usually assign an external theta-role.

(34)



The different meanings that have been noted by grammarians will be derived from differences in context — in particular what stems this complex is added

[24]The details of my account differ from those of Phillips' account, in particular the way the external argument is licensed.

to. When *a-+ha-* is attached to a stem which already has an external theta-role and implied completion, the salient difference when compared with the *an-(/i-)* form of the verb is one of stativity, which gives an abilitative reading ((27a) vs. (30a)).[25] When the stem has no endpoint implied, the result is an achievement reading ((14a) vs. (14b)). When the stem has no external theta-role, the salient change is the additional Cause argument ((20a) vs. (20b)).[26]

(35) a. *aha-* abilitative — SALIENT CHANGE

[$_{vP}$ [$_{v'}$ **a-** [AspP DP [Asp' **ha** [VP Y [V' $\sqrt{}$]]]]]]
"Agent" [+telic] (Agt, Th, ...) → stativity

b. *aha-* achievement

[$_{vP}$ [$_{v'}$ **a-** [AspP DP [Asp' **ha** [VP Y [V' $\sqrt{}$]]]]]] → telicity
"Agent" [+telic] (Agt, Th, ...)

c. *aha-* causative

[$_{vP}$ [$_{v'}$ **a-** [AspP DP [Asp' **ha** [VP Y [V' $\sqrt{}$]]]]]] → cause
Cause [+telic] (Th)

Noteworthy, given the context of this chapter, is the use of theta-grids in these representations. This will become important in the following discussions. Due to the differences in interpretation of *a-+ha-*, it appears that there is a difference between those roots that are already endowed with an external argument, and those that are not.[27] The former have the abilitative (or completive) reading, while the latter have the causative reading. While technically the Spec,AspP position is a position for Causes, those roots that are associated with Agent theta-roles will discharge this theta-role in the Spec,AspP position.

4.4. External Arguments: Argument Structure vs. Syntax

Now we have two types of external arguments — those introduced in Spec,*v*P and those introduced in Spec,AspP. In some cases (see (12a) vs. (13a)), the actual theta-role seems quite similar and only the event structure has changed. Here I want to argue that the theta-role in Spec,*v*P is different in kind from the one in Spec,AspP. We have already seen that telicity can

[25]Recall that *an-* is always the transitive form when there is an alternation, but *i-* sometimes shows up with an external argument if there is no inchoative form of the root.

[26]We have seen *ha-* used in two other contexts in (9) (causative *anka-*) and (10) (inchoative *iha-*) above where it seems that an additional argument is not being added. In the case of *anka-*, I would say that one event can have only one Cause/Agent so the *an-+ka-* can add only one. The difference in these predicates is that they are eventive and not stative. In the case of *–i+ha*, I would say that *–i* acts like an anticausative so the Cause would be suppressed. These two forms are much less productive than the *maha-* construction but I maintain, following Hung (1988) that, when they are possible, they are decomposable into smaller parts of *i-*/*an-* and *ha-*.

[27]In Phillips' work, the difference is credited to a distinction between eventive and non-eventive roots. Since it appears to me so far that many of the eventive roots can appear in non-eventive contexts, I have not made use of this distinction.

introduce an argument that does not exist in the theta-grid of the verb. This is represented in (35c) above and exemplified by (21c). Therefore it appears that it is the syntactic construction itself that adds the argument. It is the telicity marked Asp that introduces the Cause. At first glance we could say that the syntax adds the theta-role in both the Spec,*v*P and the Spec,AspP but it is interesting that these two arguments act differently when the verb is nominalized.

One way of creating nominals in Malagasy is to prefix *f-* to the circumstantial topic form of the verb (*f*+CT nominals). Recall that the circumstantial topic form of the verb is used when something other than the external argument or direct internal argument is the subject of the sentence as shown in (1c). Below is an example of an *f*+CT nominal using the root $\sqrt{sasa}$ 'wash'. The nominal has, among other meanings,[28] the meaning of action of doing something.

(36) a. $\sqrt{}$**sasa** 'wash'
b. f+an+sasa+an[29] → fanasana 'the action of washing'

As can be seen in the example below, the arguments of the root may be realized and they behave as they would with the verb itself.

(37)	tsarabe	ny	fanasan'ny	lehilahy	lamba	(RJ: Feb 2011)
	good-very	DET	*F-AN*-wash-CT.GEN'DET	man	clothes	

'The way that the man is washing the clothes is very good.'

This maintenance of argument structure does not occur when an *f*+CT nominal is constructed with an *a-+ha-* form of the verb, however. When *f-* is added to the *a-+ha-* form, generally an abstract noun is created.[30]

(38) a. $\sqrt{}$**finaritra** 'pleasant'

b.	m-a-ha-finaritra	mahafinaritra		'to please'
c.	f-a-ha-finaritra-an	ny fahafinaretana		'pleasure'
			≠	'the ability to please'
			≠	'the pleasing'

Further, if there is an N-bonded argument, it is not predictably the external argument and the external argument interpretation is predictable

[28]It can also refer to the possible roles of the Circumstantial Topic construction subject such as Instrument or Location.

[29]Following Erwin (1996), I assume that the word final /a/ is added by a late phonological rule.

[30]The *a-+ha-* forms also do not appear in Circumstantial Topic constructions (though the CT form of the root does appear within nominals). I believe that this is a related fact. The constructions in Tagalog that are equivalent to CT constructions have characteristics that differ from the characteristics of Actor Topic and Theme Topic constructions (having to do with the specificity restrictions on the Theme). Further, there are *f-an-*(AT), *f-a-ha-*(AT) and *ha-*(CT) nominals that also must be studied. I leave this for future work.

with the *an-* form of the verb. In (39), I am the one being pleased (the internal argument), not the one doing the pleasing.[31] Another example is given in (40) where the root presumably has an Agent in the theta-grid of the verb (as shown by its use in the abilitative construction) but that agentive external argument is also lost in the *f-a-+ha-*(CT) nominal. A genitive will realize the internal argument.

(39) ny fahafinaretako 'my pleasure'

(40) a. Mahasitrana ny seriny ny mpitabo.
PST-A-HA-cure DET cold-3 DET doctor
'The doctor is able to cure his cold.'

b. *Fahasitranan'ny mpitabo ny seriny 'The doctor's cure of his cold'

c. Fahasitranan'ny seriny 'The cold's cure'

In other words, the *f-an-*(CT) nominal can be used in a similar fashion to English gerunds where the full argument structure is preserved, but this is not the case with the *f-a-+ha-*(CT) nominal. I take the distinction between the argument structure in *f-an-*(CT) nominals and *f-a-+ha-*(CT) nominals to indicate an important difference in how the external arguments are introduced. The prefix *an-* in *v* provides the needed structure for the theta-roles associated with the root to be discharged, or, as in the case of the root *tsara* 'good', the *v* introduces an external argument. This is different from the external Cause argument that appears in Spec,AspP. This is an argument that is introduced or supported solely by the syntactic structure and its formal features (telicity). It is the latter sort of argument that disappears in the case of the nominalization.[32]

This distinction between the two types of external arguments is the second indication that a notion of argument structure associated with roots is needed, the first being the difference between the causative meaning and the abilitative meaning of *a-+ha-*. The third comes from the details of structures that appear with bare roots. This set of data is discussed in the following section.

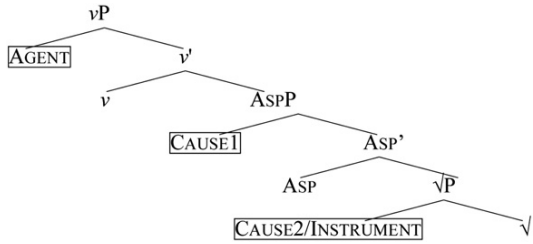
[31]Elsewhere I have claimed that only those roots that contain an external argument in their theta-grid can realize a full argument structure in a *f-a-+ha-*(CT) nominal. This does not seem to be the case, however, and overwhelming majority of *f-a-+ha-*(CT) nominals have an abstract meaning with no realization of the external argument.

[32]I thank an anonymous reviewer for pointing out other cases where arguments are dropped in the process of nominalization (e.g., *John's growth of tomatoes (Marantz, 1997), and other data from Spanish). Future work on the argument structure of nominals should reveal whether the Malagasy facts are connected to these, and also exactly why the nominal forms are more restricted on the argument realization than the verbal forms (or gerunds).

5. ROOTS PROVIDE ARGUMENT STRUCTURE: PRELIMINARY REPORT

While Malagasy appears to derive most of its verbs with morphology that reflects the details of argument structure, it also has many verb-like uses of bare roots. My goal in this section is to show first that roots can be associated with a range of different argument structures suggesting that roots, independent of a syntactic frame, must be able to distinguish between different sorts of argument frames. Second, I aim to show that within the domain of the root, there is also a theta-hierarchy with a different sort of Cause (Cause2) or Instrument as the external argument. The full *v*P domain, then, will contain several inner domains, each with its own external argument. The map of the *v*P is roughly schematized in (41) below.

(41)



We have already seen with the Cause position that Agents can also appear. However, this is the canonical position for Causes, and Agents have the additional meaning of ability. I am tentatively suggesting in this chapter that the Cause2 in Spec,√P is canonically used for Instruments (*with* DPs in English). Causes and Agents can also be found in this position, but again Agents have the additional abilitative meaning. Importantly, this argument is not the same as the Spec,AspP Cause since there is data suggesting that the two must be distinguished.

Roots in Malagasy have several consistent characteristics. They do not encode events with duration — only an end state is described. Further, the external argument is non-volitional. Some examples of typical root verbs are given in (42) below.

(42) a. *hita* 'see'[33]
Hitako ny ankizy
see.GEN.1SG DET children
'I see the children.'

b. *re* 'hear'
Reko ny ankizy
hear.GEN.1SG DET children
'I hear the children.'

[33]See Vendler (1967, p. 113) for a discussion of *see* as an Achievement.

c. *azo* 'understand'
Azoko ny ankizy
understand.GEN.1SG DET children
'I understand the children.'

Roots are also used to form one of the four types of Malagasy passive, according to Rajemisa-Raolison (1971). We have already seen the three other types of passive above — the suffix passive (26a), the *voa-* passive (29a), and the *tafa*-passive (33). While it might not be clear that all of these are passives in the English sense, they are passive-like in that they all have Theme subjects and the external argument is realized within the *v*P. The suffix passives are the canonical passives. The *voa*-passives are the canonical passives with telicity added. In the case of the *tafa*-passive, we have seen that this is really an unaccusative with the surprising appearance of an external argument. Now we turn to the constructions that have been labeled as root passives.

Root passives show subtle differences from suffixal passives. Like the *voa-* and *tafa*-passives, root passives are telic and have non-volitional external arguments. We see the difference in telicity in example (43) where the endpoint is defeasible with the suffixal passive (43a), but not with the root passive (43b).

(43) SUFFIX PASSIVE
a. Novitáin'ny ankizy ny asa [$\sqrt{}$vita+in] + n
PST-finish.TT.GEN'DET children DET work
'The children finished the work.'

a'. ... nefa mbola tsy vita foana
... but still not finished yet

ROOT PASSIVE (telic)[34]
b. Vitan'ny ankizy ny asa[35] [$\sqrt{}$vita] + n
finish.GEN'DET children DET work
'The children finished the work.'

b'. #... nefa mbola tsy vita foana
... but still not finished yet

Examples (44) and (45) below highlight the difference in the interpretation of the external argument. In (44), when the external argument is a natural force such as the wind, it is more likely that the root passive will be used. If, however, the external argument could be a volitional Agent, the suffixal passive is generally used (from Rajemisa-Raolison, 1971, p. 95).

[34]The tense system of root passives is unlike that of suffixal passives in that it only distinguishes between non-future (no overt realization) and future (with a *ho* particle).
[35]Here an Agent appears. This is discussed below.

(44) ROOT PASSIVE

a. Símban'ny	rivotra	ny	voninkazontsika	[√simba]	+ n
ruin.GEN'DET	wind	DET	flowers.GEN.1PL.INCL	root	+ GEN
'Our flowers were ruined by the wind.' (nondeliberate)					

SUFFIX PASSIVE[36]

b. Simbán'ny	zanakao	ny	kilalaonay	[√simba+an]	+ n
ruin.TT.GEN'DET	child.GEN.2SG	DET	toys.GEN.1PL.EXCL	root+ TT	+ GEN
'Our toys were ruined by your child.' (deliberate)					

Along the same lines, in (45a) the external argument of the root is more of an Instrument while in (45b) the external argument of the suffixal passive is again an Agent (from Rajemisa-Raolison, 1971, p. 95).

(45) ROOT PASSIVE (non-volitional)

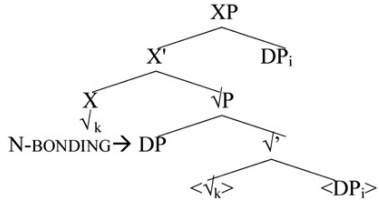
a. Sitran'ny	fanafody	ny	ankizy	[√sitran]	+ n
cure.GEN'DET	medicine	DET	children	root	+ GEN
'The children were cured by the medicine.'					

SUFFIX PASSIVE

b. Sitránin'ny	dokotera	ny	ankizy	[√sitran+in]	+ n
cure.TT.GEN'DET	doctor	DET	children	root + TT	+ GEN
'The children were cured by the doctor.'					

Note that all of these roots have argument structure: generally a Theme in subject position and what appears to be a Cause of some sort in the highest specifier position within the predicate. As with the passives and Circumstantial Topic constructions that we have seen above, the external argument is attached to the head of the predicate through the morphological process of N-bonding. Following the lines of the structure in (2), I propose the following tree for the root passives. As with the passive, the Theme subject has been generated with in the predicate projection but is eventually realized in a position external to the predicate. The head of the predicate has raised to a higher functional head and in this configuration we find the N-bonding between the moved predicate head and the argument in the highest specifier position within the predicate.

(46)



[36]Note that the only distinction between the root passive and the suffixal passive in this case is the stress placement.

It appears, then, that roots can project argument structure much like verbs can. However, unlike verbs, there are no obvious signs of extra syntactic structure that could be responsible for these arguments. While the absence of morphology cannot be used as a definitive argument for lack of extra syntactic structure, it is at least suggestive in a language where argument structure is very often associated with extra morphology. I will claim, however, the external argument is introduced through the syntax alone.

To investigate the question of the argument structure of roots, we turn now to adjectives, which are often realized as roots. Two things become clear very quickly. First, the argument structure of these adjectival roots is quite complex. Second, when this complex argument structure of roots is compared to the argument structure of root passives, as in (43b), (44a), and (45a), it is not clear (to me at least) how to distinguish between the verbal roots and the adjectival roots.[37] I will therefore, for the most part, refrain from labeling them.

I begin with a traditional characterization of adjectives from Rajemisa-Raolison (1971, p. 43), who divides adjectives into various classes according to the syntactic frames in which they appear. While I have not reproduced his full list, the examples below give an indication of the range of possibilities. I have listed three classes in particular (leaving out one class that embeds verbal complements). Class 1 adjectives (his (b); I give two of the four types listed) show that these roots can take accusative objects.

Class 1: accusative objects

Type 1: (*feno* 'full', *omby* 'contain', rakotra 'covered', *henika* 'full')

(47) a. Feno rano ny siny
full water DET jug
'The jug is filled with water.'

b. Tsy omby anay ny tranonao
NEG contain 1PL.EXCL.ACC DET house.2SG
'Your house doesn't hold us.'

Type 2: (*sahaza* 'suitable', *antonona*/*mendrika* 'worthy')

(48) sahaza ny rahalahinao io
suitable DET brother.2SG DEM
'This is suitable for your brother.'

Class 2 roots are psych predicates (his (c)). According to Rajemisa-Raolison, these predicates can take two types of internal arguments, one argument that might correlate with the Target/Subject Matter of Pesetsky (1995). The other appears to be a less direct Cause.

[37] Ralalaoherivony (1995) discusses the problems of finding tests to distinguish verbs from adjectives in Malagasy. In Travis (2001), I explored a possible test, but the data are quite subtle and vary among speakers.

Class 2: 'sentiment' adjectives (*faly* 'happy', *sosotra* 'annoyed', *tezitra* 'angry')
amy for people for whom one feels the sentiments (49a)
noho for the people or things that are the cause (49b)

(49) a. Tezitra tamin'Isambilo ny olona
angry PST.PREP.GEN'Isambilo DET people
'The people were angry at Isambilo.'

b. Faly noho ny fahatongavanao ny mponina
happy because.of DET arrival DET people
'The inhabitants were happy about your arrival.'

The final class that I give an example of appears to have the structure of (46) above. There is an N-bonded argument that also appears to be some sort of Instrument or Cause (his (a)). He notes that these can be assimilated with passives and that the genitive DP is Agent-like.

Class 3: (*lena* 'wet', *sasatra* 'tired', *vizana* 'tired', *maina* 'dry', *marary* 'sick', *maty* 'dead' ....)

(50) a. Lenan'ny orana izy
wet.GEN'DET rain 3
'He got wet by the rain.'

b. Mararin'ny rohana ny rainy
sick.GEN'DET rheumatism DET father.GEN3
'His father is sick with rheumatism.'

It is this last class that is the most interesting for the purposes of this chapter. The root takes an external argument that is internal to its projection. It behaves like the argument that appears in Spec,*v*P of a passive. However, as I am assuming roots have no extra structure, this external argument must be in the specifier position of the root, therefore much lower in the tree than the passive Agent. I suggest that this is an Instrument position, parallel to the Cause position in Spec,ASPP and the Agent position in Spec,*v*P. Agents will be external arguments of eventive predicates (accomplishments and activities), Causes are external argument to change of state predicates (achievements), and Instruments are external arguments of state predicates. Further, Causes and Instruments are not assigned through the argument structure of the heads, but rather by the event structure of the syntactic structure itself. For these latter two, the emphasis is on the end result and not the action. Rajemisa-Raolison (1971, pp. 94–95) writes:[38]

[38]'Le participe racine indique une action subie de façon générale, d'où, souvent, fortuite, et insiste généralement sur le résultat ; tandis que le participe à suffixe, une action subie de façon actuelle, d'où, faite à dessin, et insiste sur l'action même.'

> The root passive indicates an action undertaken in a general way, is more accidental, and stresses the result, while the suffixal passive indicates an action undertaken at a specific time, intentionally, and stresses the action itself.

This raises the question of what sort of argument is the external argument of a root. While Rajemisa-Raolison suggests through the examples in (44a)–(45a) that this position is reserved for non-agentive subjects, my consultants allow a wide range of possibilities. Below in (51) we have an example of a clear Agent with a root (and see (43b) above).

(51) Lenan-dRakoto ny lamba
wet.GEN-Rakoto DET clothes
'The clothes got wet by Rakoto.'

The suffixal passive[39] is also possible in this case.

(52) Leman-dRakoto ny lamba
wet.TT.GEN-Rakoto DET clothes
'The clothes got wet by Rakoto.'

Consultants report a difference in meaning between the two, where (51) seems to be non-volitional and (52) volitional. For speakers of the main dialect (52) but not (51) can be followed by the clarification:[40]

(53) ... ary niniany natao izany
... CONJ PST.AT-*I*-do.deliberately.GEN.3 PST.AT-do DEM
... and that was done deliberately by him.'

What is clear is that the roots focus on a state that may occur at the end of an event. The role of the external argument as a participant of a causing event is backgrounded (see Dell, 1983 for a characterization of this distinction made for the *ma-* construction in Tagalog, a related language).

While Rajemisa-Raolison's typology of adjectives implies that adjectives other than those in Class 3 cannot take these genitive external arguments, this does not seem to be the case. My consultants, corroborated by examples from the literature and from the web, can add these arguments to a wide range of adjectives as exemplified below (and this varies somewhat from speaker to speaker).

CLASS 1 ADJECTIVES:
(54) Fenon'ny voninkazo ny trano
filled.GEN'DET flowers DET house
'The house was filled with flowers.'

[39]The suppletive suffixal passive of *lena* is *lemana* (Abinal & Malzac 1988, p. 400).

[40]As with the data in (22), there is a disagreement between consultants from the north of Madagascar (RH, JJ) and the consultant from the capital (VR) whose judgments are closer to those reported in the grammars. These correlations will be followed up in future research.

COLOR TERMS:

(55) a. maintin'ny saribao ny rano
black.GEN'DET charcoal DET water
'The water got black with the charcoal.'

b. Menan'ny fotaka ny rano
red.gen'DET earth DET water
'The water was red with the earth.'

Ralalaoherivony (1995, p. 140) writes of adjectives:[41]

> Even though the realization of a causative argument might be conditioned by [certain] considerations, the possibility of inserting *–na Ne* [genitive] is in general a characteristic of adjectival constructions.

It is interesting to note here that the Class 2 adjectives introduced above, the psych adjectives, strongly prefer (or, for some speakers, only allow) non-agentive (non-human) external arguments. For example, while (56a) is acceptable to everyone I asked, (56 b) is dispreferred by speakers of the dominant dialect.

CLASS 2 ADJECTIVES: PSYCH ADJECTIVES:

(56) a. Sosotry ny toetrany aho
annoyed.GEN.1SG DET behavior.GEN.3 1SG.NOM
'I am annoyed by his behavior.'

b. % sosotro ny zanako
annoy.GEN.1SG DET child.GEN.1SG
'My child is annoyed because of me.'

However, the human external argument is allowed with the same root in the *a-+ha-* construction.

(57) Mahasosotra ny zanako aho.
PRES-*A-HA*-annoyed DET child.GEN.1SG 1SG.NOM
'I made my child annoyed.'

I suggest here that while the internal arguments of these roots may vary, they all have an external argument position that may be filled, giving the meaning of Cause or Instrument. I say 'Cause or Instrument' here since this position allows different arguments from the *m-+a-+ha-* cause position as shown in the judgment differences between (56b) and (57).

An interesting preliminary outcome of this research is that Instruments are direct arguments of the $\sqrt{}$' in the same way that Agents are arguments of v' and Causes are arguments of telic ASP' (though the latter two are assigned by the syntax alone). This, in fact, should not be surprising given previous observations by Marantz (1984) and Baker (1988b). I present Baker's data

[41] "Bien que la réalisation d'une phrase à complément causatif puisse être conditionnée par les considérations notées ci-dessus, la possibilité d'insertion de *–na Ne* est en général caractéristique des constructions adjectivales."

here. He notes that in Chichewa Instrumental Applicatives behave differently from Benefactive Applicatives. More specifically, in Instrumental Applicatives, both the Instrument Object and the Basic Object can undergo WH-movement and can have an agreeing object marker on the verb. In the Benefactive Applicative only the Basic Object can undergo WH-movement and only the Benefactive Object can have an agreeing object marker on the verb. The data for the object marking distinctions are given below.

(58) Chichewa Benefactive Applicatives (Baker, 1988b, p. 355)

a. Mavuto a- na- **wa-** umb -ir –a mtsuko (**ana**)
Mavuto SP PAST OP mold APPL ASP waterpot children
'Mavuto molded the waterpot for them (the children).'

b. *Mavuto a- na- **u-** umb -ir –a ana (**mtsuko**)
Mavuto SP PAST OP mold APPL ASP children waterpot
'Mavuto molded it (the waterpot) for the children.'

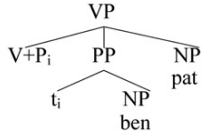
(59) Chichewa Instrumental Applicatives (Baker, 1988b, p. 355)

a. Mavuto a- na- **u-** umb -ir –a mtsuko (**mpeni**)
Mavuto SP PST OP mold APPL ASP waterpot knife
'Mavuto molded the waterpot with it (the knife).'

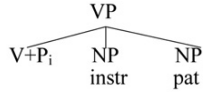
b. Mavuto a- na- i- umb -ir –a mpeni (**mitsuko**)
Mavuto SP PST OP mold APPL ASP knife waterpots
'Mavuto molded them (the waterpots) with a knife.'

Without going into the details of the account, we simply note the symmetry in the Instrumental Applicative construction. Baker (1988b, p. 362) proposes a structure to explain this symmetry where both the basic object and the instrumental object are direct arguments of the verb, while in the Benefactive Applicative, the Benefactive must remain an object of a preposition.[42]

(60) a. Benefactive



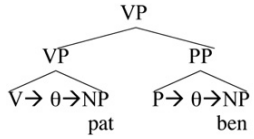
b. Instrumental



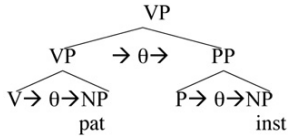
While Marantz's analysis predates Baker's, it is closer to what I will propose here. Marantz proposes that both the Benefactive and the Instrument are VP modifiers. What is important in Marantz's analysis for the present account is that the Instrument gets its theta-role from the VP complex which contains the Theme (pat — Patient — here). The Preposition simply transmits this theta-role. Benefactives, however, receive their theta-role from the Preposition.

[42]Baker also argues that Instruments are direct arguments of the verb using noun incorporation data. I refer the reader to his article for details.

(61) a. Benefactive

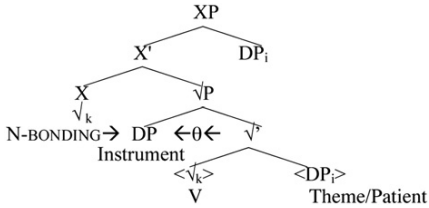


b. Instrumental



As in Marantz's analysis, in the structure that I have proposed above, the combination of the root head and the Theme (Patient) assign a theta-role to the external argument. As in Baker's analysis, my structure has the Instrumental as a bare DP.

(62)



Now we turn to the DP-movement part of this construction. In Marantz's structure, the Instrument stays in a position higher than the Patient (Theme). In the Malagasy root constructions, however, the Theme becomes the grammatical subject. Here I have indicated this with a type of passive movement. We already know from the Theme Topic constructions introduced earlier that passives in Malagasy do not demote their external arguments. Instead, the external arguments remain in their merged positions and attach to the head of the predicate through N-bonding. It is no surprise, then, that the Instruments (Causes) in these constructions also attach to the heads of their predicates through N-bonding. My claim, then, is that there is an inner passive that occurs within the $\sqrt{P}$ where the Instrument is the external argument.

If this is truly some sort of inner passive, it appears to be obligatory, otherwise we would expect the Instrument to appear higher than the Theme in some constructions. There is one construction that might be analyzed as realizing exactly the predicted structure. Paul (2000) discusses an Instrument Raising (and locative alternation) construction in Malagasy that may be a case of an 'active' $\sqrt{P}$. An example of this construction is given below.

(63) nandidy antsy ny hena Rasoa (Paul, 2000, p. 35)[43]
PST.AT-*AN*-cut knife DET meat Rasoa
'Rasoa cut the meat with the knife.'

[43]My current consultants do not accept this sentence, nor the use of the Instrument as the subject (**Mandidy ny hena ny antsy* 'The knife cuts the meat'). Interestingly, they do accept the passive version given in (65b) below. This requires more data work.

(64) namafy voa ny tany Rasoa (Paul, 2000, p. 34)
PST.AT-*AN*-sow seed DET land Rasoa
'Rasoa sowed seeds in the land.'

We see that the Instrument (63) and Material (64) appear as direct arguments above the Themes in both cases. There appears to be no correlation between the root construction and the Instrument raising structure, however. First, not all verbs have root passives, and the verbs in (63) and (64) cannot appear in bare root forms as (65) and (66) show. In each case, a suffixal passive must be used.

(65) a. *Didin'ny antsy ny hena
cut.GEN'DET knife DET meat
'The meat was cut by the knife.'

b. Didian'ny antsy ny hena
cut.TT.GEN'DET knife DET meat
'The meat was cut by the knife

(66) a. *Fafin'ny voa ny tany
sow.GEN'DET seed DET land
'The land was sown with seeds.'

b. Fafazan'ny voa ny tany
sow-TT.GEN'DET seed DET land
'The land was sown with seeds.'

Further, not every form that has a root passive can appear in the Instrument raising construction.

(67) a. Sitran'ny fanafody ny ankizy
cure.GEN'DET medicine DET children
'The children were cured by the medicine.'

b. *Manasitrana fanafody ny ankizy ny dokotera
PRES.AT-AN-cure medicine DET children DET doctor
'The doctor cures the children with medicine.'

Generally, when any additional external arguments are added, the Instrument appears within a prepositional phrase, making Malagasy look more similar to languages such as English.

(68) Manasitrana ny ankizy amin'ny fanafody ny dokotera
PRES.AT-cure DET children PREP.GEN'DET medicine DET doctor
'The doctor cures the children with the medicine.'

More work needs to be done on the exact distribution and realization of Instruments in Malagasy before any firm conclusions are drawn. What I have presented here is a hypothesis to be explored.

The question arises as to the correlation that this constellation of facts might have with other languages, such as English. There appears to be no root passive construction in English, but one could still propose that Instruments are merged higher than Themes. If the inner passive movement of the Theme over the Instrument were obligatory in English, as it appears to be in Malagasy, we would expect the Instrument in English to be demoted and to appear in a prepositional phrase.[44] Instead of the *by*-phrase that appears with the outer passive, the Instrument would appear inside of a *with*-phrase.[45] One could then maintain a version of UTAH (Baker, 1988a) where the theta-hierarchy is universal — Instruments would be universally generated above Themes.

6. CONCLUSION

Languages such as Malagasy can provide a way of investigating the role of syntax in the determination of argument structure. The morphology of Malagasy is quite overt in realizing both argument structure and event structure. Certain morphemes (*an-* and *i-*), when creating minimal pairs of lexical items, determine whether or not an external argument will be licensed. Other morphemes determine whether or not a predicate is telic (*-ina* (Theme Topic) vs. *voa-*). Still other morphemes ensure stativity (*a-*). Because of this overt use of morphology, one might expect two things: (i) that regular use of morphology would yield regular realizations of arguments and (ii) that less morphology would entail less argument structure.

Through a preliminary investigation of the relationship of morphology to argument structure, I have suggested first that some arguments are introduced by syntax alone while others require information from the root and support from the syntax. These two types of arguments licensing can be distinguished by the interpretation of *a-+ha-* constructions as well as the interpretation of

[44]This is quite speculative at this point but there are some intriguing correlations. English uses *with* for Instruments as well as for material themes in SPRAY/LOAD constructions (*load the hay onto the truck*, *load the truck with hay*). In the latter case, one could say that *the truck* is now a Theme and 'passivizes' over the material, forcing the material to appear as an oblique. Also, languages like German use the same preposition *von* for demoted Agents, Causers, and Themes. Schlücker (2005) has proposed that German Instrument *von*-phrases are lower than agentive *von*-phrases but there are confounds in her data having to do with the definiteness of the relevant arguments. Additional data work needs to be done. Another interesting correlation is found in ergative languages where ergative case and instrumental case are homophonous, which would mean that lower external arguments and higher external arguments receive the same marking.

[45]Note that the complements of *with* instrumental phrases (*amina* phrases in Malagasy) is a subset of the elements that can appear in the direct instrumental constructions in Malagasy (which can allow Causes and Agents as well). This is not unlike what is reported for *by*-phrases in some language like Greek where the object of the preposition must be Agentive. The preposition itself has selectional restrictions that restrict the complements.

f+CT nominals. My second claim is that argument structure within the projection of the root is as complex as the internal argument structure within full *v*Ps, suggesting that roots contain fully specified argument frames. Further, by investigating some of the details of the root projection, I suggested that Instruments are inner external arguments that become prepositional phrases through a lower passive construction.

ACKNOWLEDGMENTS

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